

NOT FOR PUBLICATION  
SUMMARY OF 2019  
WEED CONTROL EXPERIMENTS

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## METHODS

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|                                 |                                  |
|---------------------------------|----------------------------------|
| EPP = Early preplant            | MPOST = Mid postemergence        |
| PPI = Preplant incorporated     | LPOST = Late postemergence       |
| PEI = Preemergence incorporated | LLPOST = Late-late postemergence |
| PRE, PE = Preemergence          | POST = Postemergence             |
| EPOST = Early postemergence     | POSTDIR = Postemergence Directed |

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## FORMULATION

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|                                  |                                      |
|----------------------------------|--------------------------------------|
| ACS = Aqueous capsule suspension | WP = Wettable powder                 |
| CS=Capsule suspension            | WG, WDG = Water dispersible granules |
| DF = Dry Flowable                | WSP, SP = Water Soluble powder       |
| E, EC = Emulsifiable concentrate | G = Granules or Glon/A               |
| FL, F = Flowable                 | S = Solution                         |
| L = Liquid flowable              | SC=Suspension concentrate            |
| ME = Micro-encapsulated          | SE=Suspension emulsion               |
| OD=Oil dispersion                | SG = Soluble granules                |
| WBF = Water-based flowable       |                                      |

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## MISCELLANEOUS

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|   |  |
|---|--|
| F = Fall                                  | AMS = ammonium sulfate                                       |
| S = Spring                                | bee = butoxyethyl ester                                      |
| Inc., I = Incorporation                   | dea = diethanolamine salt                                    |
| Applic = Application                      | dga = diglycolamine  |
| Cntl = Control                            | dma = dimethylamine salt                                     |
| Inju = Injury                             | ioe = isooctyl ester   |
| %ir, inju = Percent injury rating         | MSO, MVO = methylated vegetable oil                          |
| %sr, %std, strd = Percent stand reduction | NIS = nonionic surfactant                                    |
| HT = Plant height                         | PO, OC , POC = Petroleum oil concentrate<br>(17% emulsifier) |
| SPK = Spike stage                         | SURF, S = Surfactant   |
| Tswt, TW = Test weight                    | TMS = trimethylsulfonium salt                                |
| Yld = Yield                               | 28N, UAN = 28% liquid nitrogen fertilizer                    |
| alk = alkanolamine salt                   |  |
| AMN = ammonium nitrate                    |  |

## KEY TO ABBREVIATIONS AND EVALUATIONS

Crop injury, crop stand and weed control ratings are based on a visual estimate using a scale of 0 = no effect to 100 = complete kill.

| Abbreviation = Weed/Crop             | Bayer Code | Abbreviation = Weed/Crop                 | Bayer Code |
|--------------------------------------|------------|--|------------|
| Alfa = Alfalfa                       | MEDSA      | Nabe = Navy bean                         | PHSSS      |
| Amar = Amaranth                      | AMA        | Nfcf = Nightflowering catchfly           | MELNO      |
| Barl, Bar = Barley                   | HORVX      | Oats = Tame oats                         | AVESA      |
| Bdlf = Broadleaf                     | -          | Pagf = Pale goosefoot                    | CHEPA      |
| Biww = Biennial wormwood             | ARTBI      | Pest = Perennial sowthistle              | SONAR      |
| Bubu = Buffalobur                    | SOLCU      | Pesw = Pennsylvania smartweed            | POLPY      |
| Bygr = Barnyardgrass                 | ECHCG      | Pibe = Pinto bean                        | PHSSS      |
| Cath = Canada thistle                | CIRAR      | Pigw = Pigweed                           | AMASS      |
| Cano = Canola                        | BRSRC      | Poam = Powell amaranth                   | AMAPO      |
| Cocb = Common cocklebur              | XANST      | Pota = Potato                            | SOLTU      |
| Colq = Common lambsquarters          | CHEAL      | Powe = Pondweed                          | PTMNO      |
| Coma = Common mallow                 | MALNE      | Prle = Prickly lettuce                   | LACSE      |
| Copu = Common purslane               | POROL      | Prmi = Proso millet (tame)               | PANMI      |
| Corw = Common ragweed                | AMBEL      | Prpw = Prostrate pigweed                 | AMABL      |
| Cram = Crambe                        | CRMAB      | Prsp = Prostrate spurge                  | EPHHT      |
| Cudo = Curly dock                    | RUMCR      | Quin = Quinoa (chenopodium quinoa)       | CHEQU      |
| Dali = Dandelion                     | TAROF      | Qugr = Quackgrass                        | AGRRE      |
| Dobr = Downy brome                   | BROTE      | Rrpw = Redroot pigweed                   | AMARE      |
| Drbe = Dry bean                      | PHSSS      | Ruth = Russian thistle                   | SASKR      |
| Duru = Durum wheat                   | TRZDU      | Safl, Saff = Safflower                   | -          |
| Ebns = Eastern black nightshade      | SOLPT      | Shpu = Sheperdspurse                     | CAPBP      |
| Eda=Edamame                          | -          | Smwe = Annual smartweed                  | POLSS      |
| Fach = False chamomile               | MATMA      | Soyb, Sobe = Soybean                     | GLXMA      |
| Fibw = Field bindweed                | CONAR      | Spsp = Spotted spurge (prostrate spurge) | EPHMA      |
| Fipc = Field pennycress              | THLAR      | Sugb, Sgft = Sugarbeet                   | BEAVA      |
| Fisb = Field sandbur                 | CCHIN      | Snfl, Sufl = Sunflower                   | HELAN      |
| Flwe = Flixweed                      | DESSO      | Swcl = Sweet clover                      | MEUOF      |
| Foba = Foxtail barley, Forage Barley | HORJU      | Tabw = Tame buckwheat                    | POLSS      |
| Fomi, Ftmi = Foxtail millet          | SETIT      | Tamu = Tansy mustard                     | -          |
| Fota, Fxtl = Foxtail species         | SETSS      | Tumu = Tumble mustard                    | SSYAL      |
| Girw = Giant ragweed                 | AMBTR      | Tymu = Tame yellow mustard               | -          |
| Grft = Green foxtail                 | SETVI      | Vowh = Volunteer wheat                   | TRZAS      |
| Gsft = Goosefoot                     | CHESS      | Vele = Velvetleaf                        | ABUTH      |
| HNS, Hans = Hairy nightshade         | SOLSA      | Vema = Venice mallow                     | HIBTR      |
| Howe = Horseweed                     | ERICA      | Wahe=Waterhemp                           | AMATA      |
| HRSW = Hard red spring wheat         | TRZAS      | Wht = Volunteer wheat                    | TRZAS      |
| KOCZ = Kochia                        | KCHSC      | Wibw = Wild buckwheat                    | POLCO      |
| Lath = Ladysthumb                    | POLPE      | Wigr = witchgrass                        | PANCA      |
| Lent = Lentils                       | LENCU      | Wimu = Wild mustard                      | SINAR      |
| Llsa = Lanceleaf sage                | SALRE      | Wioa = Wild oat                          | AVEFA      |
| Mael = marshelder                    | IVAXA      | Wipm = Wild-proso millet                 | PANMI      |
| Mlgr = Mapleleaf goosefoot           | CHEHQ      | Yeft = Yellow foxtail                    | SETLU      |

| <b>Soil Test Results at Various Weed Experiment Locations</b> |                     |                       |           |                    |            |          |
|---|---------------------|-----------------------|-----------|--------------------|------------|----------|
|   | <b>Soil Texture</b> | <b>Organic Matter</b> | <b>pH</b> | <b>lb/A N</b>      | <b>PPM</b> |          |
|   |                     |                       |           |                    | <b>P</b>   | <b>K</b> |
| Absaraka, ND  | Loam                | 2.0                   | 7.2       |                    |            |          |
| Ada, MN (Peters)  | Sandy loam          | 1.8                   | 8.4       | 120                | 23         | 46       |
| Bathgate, ND  | Silty loam          | 6.5                   | 7.9       | 242                | 38         | 550      |
| Becker, MN  | Sandy loam          | 1.8                   | 6.6       | 51                 | 22         | 140      |
| Casselton, ND   | Silty clay          | 4.0                   | 7.9       | Fertilized by test |            |          |
| Crookston   | Clay                | 3.0                   | 8.0       | 211                | 6          | 105      |
| Crookston, MN (Peters)  | Loam                | 3.3                   | 8.6       | 16                 | 10         | 62       |
| Dwight  | Sandy Clay Loam     | 1.7                   | 7.9       | 50                 | 4          | 60       |
| Eckelson, ND  | Loam                | 8.0                   | 7.3       | 20                 | 5          | 515      |
| Fargo, ND (campus)  | Silty clay          | 7.0                   | 7.8       | Fertilized by test |            |          |
| Fargo, ND (section 22)  | Silty clay          | 5.6                   | 7.7       | Fertilized by test |            |          |
| Foxhome, MN (Peters)  | Sandy loam          | 3.6                   | 8.4       | 16                 | 16         | 114      |
| Galchutt, ND  |                     |                       |           |                    |            |          |
| Geneseo, ND   | Loam                | 6.0                   | 4.0       |                    |            |          |
| Glyndon, MN   |                     | 4.6                   | 8.1       | Fertilized by test |            |          |
| Hawley, MN  | Loam                | 2.2                   | 8.5       | 3                  | 4          | 105      |
| Herman, MN (Peters)   | Loam                | 4.5                   | 7.7       | 28                 | 20         | 238      |
| Hettinger, ND   | Silty loam          | 2.9                   | 6.7       | Fertilized by test |            |          |
| Hickson   | Clay                | 7.2                   | 7.5       | 103                | 55         | 975      |
| Hillsboro, ND   | Loam                | 5.6                   | 6.6       | 68                 | 28         | 318      |
| Horace, ND (KayJay)   |                     |                       |           |                    |            |          |
| Inkster, ND   | Loamy sand          | 2.1                   | 6.0       | Fertilized by test |            |          |
| Jamestown, ND (Pipestream Dam)                                | Loam                | 6.8                   | 6.8       | 28                 | 5          | 290      |
| Lake Lillian, MN (Peters)                                     | Clay-Loam           | 6                     | 7.8       | Fertilized by test |            |          |
| Mayville, ND  | Sandy Loam          | 2.9                   | 7.1       | 16                 | 18         | 80       |
| Minot, ND   | Loam                | 2.7                   | 7.0       | Fertilized by test |            |          |
| Moorhead, MN  | Loam                | 4.9                   | 7.9       | 186                | 104        | 495      |
| Moorhead, MN (Peters)   | Silty clay loam     | 4.5                   | 8.2       | 30                 | 33         | 308      |
| Oakes, ND   | Sandy loam          | 2.0                   | 6.8       |                    |            |          |
| Oriska, ND  | Silty clay          | 4.1                   | 7.4       | Fertilized by test |            |          |
| Oriska, ND (sunflower)  | Sandy loam          | 5.9                   | 3.2       |                    |            |          |
| Ottertail, MN   | Sandy loam          | 1.5                   | 6.6       |                    | 48         | 88       |
| Park Rapids, MN   | Sandy loam          | 1.5                   | 6.1       | Fertilized by test |            |          |
| Prosper, ND (Peters)  | Loam                | 3.9                   | 7.5       | 74                 | 22         | 118      |
| Prosper, ND   | Silt loam           | 4.2                   | 7.3       | 90                 | 41         | 350      |
| Tappen, ND  | Sandy loam          | 1.8                   | 7.6       |                    |            |          |
| Valley City, ND   | Fine loam           | 8.2                   | 6.7       | 11                 | 15         | 640      |
| Williston, ND   | Loam                | 2.3                   | 6.8       | Fertilized by test |            |          |
| Wyndmere, ND  | Loamy sand          | 1.9                   | 5.7       | Fertilized by test |            |          |

**LIST OF HERBICIDES TESTED IN 2019**

| <b>Common Name</b>                                   | <b>Abbreviation</b>        | <b>Company</b>        | <b>Formulation</b>     | <b>Trade Name</b>            |
|--|----------------------------|-----------------------|------------------------|------------------------------|
| Acetochlor + atrazine                                | Acet + Atra                | Corteva               | 4 + 1.5 L              | Keystone LA NXT              |
| Acetochlor + Dichlormid                              | Acet + Dcmd                | Corteva               | 6.4 EC<br>3.2 ME       | Surpass, Volley,<br>TopNotch |
| Acetochlor + Clopyralid +<br>Flumetsulam             |                            | Corteva               | 3.75+0.29+0.12 SC      | Sure Start II                |
| Acetochlor + fomesafen                               | Acet + fmsf                | Bayer                 | 2.83 + 0.64 EC         | Warrant Ultra                |
| Acetochlor + MON 4660                                | Acet + 4660                | Bayer                 | 7 EC                   | Harness                      |
| Acetochlor   |                            | Bayer                 | 3.0 SE                 | Warrant                      |
| Acetochlor+Fomesafen                                 | Acet+Fome                  | Bayer                 | 2.83+0.64 E            | Warrant Ultra                |
| Acetochlor+Mesotrione                                | Acet+Meso                  | Bayer                 | 3.52+0.33 EC           | Harness Max                  |
| Acifluorfen  | Acif                       | UPI                   | 2 E, S                 | Ultra Blazer                 |
| Ambicarbazon   |                            | Bayer                 | 70 DF                  |                              |
| Aminocyclopyrachlor                                  | AMCP                       | Bayer                 | 60 DF                  | Method 25L                   |
| Aminopyralid + 2, 4-D                                | GF-1004<br>GF-750          | Corteva               | 0.33 + 2.67            | Forefront                    |
| Aminopyralid   | Amino                      | Corteva               | 2SL                    | Milestone                    |
| Atrazine   | Atra                       | Various               | 90 DF                  | Several                      |
| Atrazine + Pyroxasulfone +<br>Fluthiacet             | Atra + Pxsf + Flth         | FMC                   |                        | Anthem ATZ                   |
| Atrazine+s-metolachlor +<br>Mesotrione+bicyclopyrone | Atra+meto+meso+<br>bcpy    | Syngenta              | 2.14+1+0.24+0.06 ZC    | Acuron                       |
| Bentazon   | Bent, Bsgn                 | UPI                   | 4 1 S                  | Basagran                     |
| Bromoxynil   | Brox                       | Bayer                 | 2 EC                   | Buctril, Several             |
| Bromoxynil + 2, 4-D                                  | Brox + 2, 4-D              | Wilbur Ellis          | 5 EC                   | Weco Max                     |
| Bromoxynil + MCPA                                    | Brox + MCPA (5lb)          | Bayer                 | 5 EC                   | Bronate Advanced             |
| Bromoxynil + fluroxypyr                              | Brox + Flox                | Corteva               | 2.9 EC                 | Starane NXT                  |
| Bromoxynil + Fluroxypyr +<br>MCPA/2,4-D              | Brox +Flox +MCPA<br>/2,4-D | Winfield<br>Solutions | 1.67 + 0.67 + 1.67 EC  | Carnivore<br>/Kochiavore     |
| Bromoxynil + Pyrasulfotole                           | Brox + Pyst                | Bayer                 | 2.8 EC                 | Huskie                       |
| Bromoxynil + Pyrasulfotole +<br>Thiencarbazon        | Brox + Pyst + Thcz         | Bayer                 | 1.46 + 0.26 + 0.042 OD | Huskie Complete              |
| Bromoxynil + Bicyclopyrone                           | Brox+Bcpy                  | Syngenta              | 1.46+0.31 EC           | Talinor                      |
| Carfentrazone  | Carf                       | FMC                   | 40 WG                  | Aim, Quick Silver            |
| Carfentrazone + 2,4-D                                | Carf + 2,4-D               | FMC                   | 0.13 + 3.9             | Rage D-Tech                  |
| Carfentrazone + Halosulfuron                         | Priority                   | Tenkoz                | 12.5 + 50 WDG          | Priority                     |
| Carfentrazone + Sulfentrazone                        |                            | FMC                   | 0.35+3.15 SE           | Spartan Charge               |
| Chlorimuron-ethyl                                    |                            | Corteva               | 25 DF                  | Classic                      |
| Chlorsulfuron  |                            | Corteva, Bayer        | 75 WG, 75 WG           | Telar / Glean                |

|  |                    |                                      |                              |  |
|--|--------------------|--------------------------------------|------------------------------|--|
| Clethodim                                    | Clet               | Valent<br>Valent<br>Agasco<br>Tenkoz | 2 EC<br>1 EC<br>2 EC<br>2 EC | Select<br>Select Max<br>Clethodim<br>Volunteer |
| Clodinafop                                   | Clfp               | Syngenta                             | 2 EC                         | Discover                                       |
| Clopyralid                                   | Clpy               | Corteva                              | 3 S                          | Stinger, ClopyrAg,<br>Transline                |
| Clopyralid + Acetochlor + mesotrione         | Clpy + Acet + Meso | Corteva                              | 0.19 + 2.8 + 0.3 SC          | Resicore                                       |
| Clopyralid + fluroxypyr                      | Clpy + Flox        | Corteva/UAP                          | 0.75 + 0.75                  | Widematch/Colt                                 |
| Clopyralid + Triclopyr                       | Clpy + Tric        | Corteva                              | 0.75 + 2.25 EC               | Redeem   |
| Clopyralid + 2, 4-D                          | Clpy + 2,4-D       | Corteva                              | 0.38 + 2 S                   | Curtail  |
| Cloransulam                                  | Clor, FrstRt       | Corteva                              | 84 DF                        | Amplify, FirstRate                             |
| Cycloate                                     | Cycl               | Helm Agro                            | 6 EC                         | Ro-Neet SB                                     |
| Desmedipham + Phenmedipham                   | Desm + Phen        | Various                              | 0.65 + 0.65 E                | Several  |
| Dicamba                                      | Dica               | Various                              | 4 S                          | Banvel, Clarity,<br>Engenia, Several           |
| Dicamba + diflufenzopyr + isoxadifin safener | BAS799             | BASF                                 | 40 + 16 WDG                  | Status   |
| Dicamba-dga + tembotrione                    | Dica + Tmbo        | Bayer                                | 1.86 + 0.27 SC               | DiFlexx Duo                                    |
| Dicamba-dga + "VaporGrip"                    | Dica + Vagr        | Bayer                                | 2.9 SL                       | Xtendimax/FeXapan                              |
| Dicamba + s-Metolachlor "VaporGrip"          | Dica + Meto +Vagr  | Syngenta                             | 1.12 + 2.26 CS               | Tavium   |
| Dichlobenil                                  |                    | Uniroyal                             | 4 G                          | Casoron 4G                                     |
| Dichlorprop-p                                | Nup-17063          | Nufarm                               | 4EC                          | Duplosan                                       |
| Diflufenzopyr + Dicamba                      | Difl + Dica        | BASF                                 | 50+ 20 WDG                   | Distinct, Overdrive                            |
| Difenzoquat                                  | Dife               | AMVAC                                | 2 S                          | Avenge   |
| Diflufenzopyr                                | Difl               | BASF                                 | 70 WG                        | None   |
| Dimethenamid-P                               | Dime               | BASF, Rosens                         | 6 EC                         | Outlook / Propel                               |
| Diquat                                       | Diqu               | Syngenta,<br>Helm Agro               | 2 S                          | Diquat   |
| EPTC   |                    | Gowen                                | 7 EC                         | Eptam  |
| Ethalfuralin                                 | Etha               | Corteva                              | 3 EC, 10 G                   | Sonalan  |
| Ethofumesate                                 | Etho               | Various                              | 4 F                          | Nortron, Ethotron,<br>Ethofumesate 4SC         |
| Fenoxaprop-P                                 | Fenx               | Bayer                                | 1 EC                         | Puma   |
| Fluazifop-P                                  | Flfp-P             | Syngenta                             | 2 EC                         | Fusilade DX                                    |
| Fluazifop-P + fenoxaprop                     | Flfp-P + fenx      | Syngenta                             | 2 + 0.66 EC                  | Fusion   |
| Flucarbazone-Na                              | Flcz               | Bayer                                | 70 WDG                       | Everest / PRE-PARE                             |
| Flumiclorac                                  |                    | Valent                               | 0.86SL                       | Resource                                       |
| Flumetsulam + Clopyralid                     | Flms + Clpy        | Corteva                              | 18.5 + 50 WDG                | Hornet WDG                                     |
| Flumetsulam                                  | Flms               | Corteva                              | 80 WG                        | Python   |
| Flumioxazin                                  | Flum               | Valent, Tenkoz                       | 50 WP                        | Valor / Encompass                              |
| Flumioxazin + cloransulam                    | Flum + clsm        | Corteva                              | 36 + 12 WDG                  | Surveil  |
| Flumioxazin + Metribuzin + Imazethapyr       | Flum + Metr + Imep | NuFarm                               | 0.67 + 3 + 0.56 SC           | Panther Pro                                    |

|  |                          |                    |                      |                            |
|--|--------------------------|--------------------|----------------------|----------------------------|
| Flumioxazin+Thifensulfuron+ Tribenuron   | Flum + Thif + Trib       | Corteva            | 40.8+5+5             | Afforia                    |
| Flumioxazin + pyroxasulfone              |                          | Valent             | 33.5 + 42.5 WDG      | Fierce                     |
| Flumioxazin + pyroxasulfone + metribuzin | Flum + Pysf + Metr       | Valent             | 33.5 + 42.5WDG + 3D  | Fierce MTZ                 |
| Fluroxypyr                               | Flox                     | Corteva            | 1.5 EC               | Starane                    |
| Fluroxypyr + 2, 4-Dioe                   | Flox + 2,4D              | Corteva            | 0.75 + 3 lb/G EC     | Starane + Salvo            |
| Fluroxypyr + MCPAioe                     | Flox + MCPA              | Corteva            | 0.71 + 2.84 EC       | Starane + Sword            |
| Fluroxypyr + 2, 4-Ddma                   | Flox + 2,4Da             | Corteva            | 0.5 + 2 EC           | Starane + Saber            |
| Fluroxypyr + 2, 4-De                     |                          | Corteva            | 3.75 EC              | Starane + Esteron          |
| Fluroxypyr + MCPAe                       |                          | Corteva            | 3.55 EC              | Starane + MCPA             |
| Fluroxypyr + MCPAe + Clopyralid          | Flox+MCPA+clpy           | Winfield solutions | 0.4 + 1.75 + 0.50 EC | Weld                       |
| Florasulam                               | Flas                     | Syngenta           |                      | not commercial             |
| Florasulam + MCPA                        | Flas + MCPA              | Syngenta           | 2.373L               | Orion                      |
| Fluthiacet-methyl                        | Flut                     | FMC                | 0.91 EC              | Cadet                      |
| Fluthiacet + Pyroxasulfone               | Flut + pysf              | FMC                | 0.126+4.174 SC       | Anthem Maxx                |
| Fomesafen                                |                          | Syngenta           | 2 EC                 | Reflex                     |
| Fomesafen + Fluthiacet                   |                          | FMC                | 2.88 + 0.12 SC       | Marvel                     |
| Fomesafen + Adjuvant                     |                          | Syngenta           | 1.88 EC              | Flexstar                   |
| Fomesafen + glyphosate + adjuvants       |                          | Syngenta           | 0.66 + 2.63 SL       | Flexstar GT                |
| Fomesafen + glyphosate + adjuvants       |                          | Syngenta           | 0.56 + 2.26 SL       | Flexstar GT 3.5            |
| Foramsulfuron + Safener                  |                          | Bayer              | 70 WDG               | Option                     |
| Fosamine                                 |                          | Albaugh            | 4 S                  | Krenite                    |
| Glufosinate                              | Gluf,                    | BASF, UPI, Nufarm  | 1.67 SL ,2.34S       | Liberty/Interline, Cheetah |
| Glyphosate-ipa                           | Glyt                     | Various            | 3 ae/G S             | Several                    |
| Glyphosate-K                             | Mon 78270 Touchdown KPMG | Bayer              | 4.5 S                | RU Weathermax, RU PowerMax |
| Halauxifen-ethyl                         | Haux                     | Corteva            | 0.572 EC             | Elevore                    |
| Halauxifen + Florasulam                  | Haux + Flas              | Corteva            | 0.1+0.1 WDG          | Quelex                     |
| Halosulfuron                             | Halo, Prmt               | Gowan              | 75 DF                | Permit / Sandea            |
| Imazamethabenz                           | Immb                     | BASF               | 2.5 EC               | Assert                     |
| Imazamox                                 | Imam, Immx               | BASF               | 1 S                  | Raptor / Beyond            |
| Imazapic                                 |                          | BASF               | 2 EC                 | Plateau                    |
| Imazapyr                                 |                          | BASF               | 2 L                  | Arsenal                    |
| Imazethapyr + Glyphosate                 |                          | BASF               | 0.17 + 2SL           | Extreme / Tackle           |
| Imazethapyr + Pendimethalin              | Imep + Pend              | BASF               | 2.9 EC               | Pursuit Plus               |
| Imazethapyr                              | Imep, Prst               | BASF               | 2 S                  | Pursuit                    |
| Imazethapyr + Saflufenacil               | Imep + Saff              | BASF               | 0.5 + 0.178 WG       | Optill                     |
| Indaziflam                               |                          | Bayer              | 1.67 EC              | Alion                      |
| Isoxadifen                               |                          | Bayer              | 50 WG                | Isoxadifen                 |

|  |                           |                       |   |   |
|--|---------------------------|-----------------------|---|---|
| Isoxaflutole                               |                           | Bayer                 | 4 SC, 2 SC                                  | BalancePro / Balance Flexx                            |
| Isoxaflutole + thien carbazole + Safener   |                           | Bayer                 | 2.63 SC                                     | Corvus  |
| Lactofen                                   |                           | Valent                | 2 EC  | Cobra   |
| Linuron                                    |                           | TKI                   | 50 DF                                       | Lorox   |
| MCPA                                       | MCPA                      | Various               | 4 EC, S                                     | Several   |
| Mesosulfuron + safener                     | Mess                      | Bayer                 | 2 WG  | Silverado   |
| Mesosulfuron + Propoxycarbazone            | Mess + Prcz               | Bayer                 | 8.14 + 2.03 WDG                             | Rimfire   |
| Mesotrione                                 | Mest                      | Syngenta              | 4 SC  | Callisto  |
| Mesotrione + S-metolachlor                 | Mest + Meto               | Syngenta              | 0.33 + 3.3 SC                               | Zemax   |
| Mesotrione + S-metolachlor + Atrazine      |                           | Syngenta              | 0.25 + 2.5 + 0.94 SC<br>0.224 + 1.74 + 1.74 | Lumax EZ<br>Lexar                                     |
| S-metolachlor                              | Meto                      | Syngenta              | 7.62 EC                                     | Dual Magnum, Cinch                                    |
| S-metolachlor + Benoxacor (active isomer)  |                           | Syngenta              | 7.6 E                                       | Dual/II/Magnum  |
| S-metolachlor + Atrazine                   |                           | Syngenta              | 2.4 + 3.1 L<br>3.23 + 2.67L                 | Bicep II Magnum<br>Bicep Lite II<br>Magnum, Cinch ATZ |
| S-metolachlor + fomesafen                  |                           | Syngenta              | 4.34 + 0.95 EC                              | Prefix  |
| S-metolachlor + Mesotrione + Bicyclopyrone | Meto + Mest + Bycl        | Syngenta              | 2.86 + 0.32 + 0.08 SC                       | Acuron Flexi  |
| S-meto + mesotrione + glyt                 |                           | Syngenta              | 4.38 SC                                     | Halex GT  |
| S-metolachlor + Metribuzin                 | Meto + Metr               | Syngenta              | 5.25 + 1.25 L                               | Boundary  |
| S-metolachlor + sulfentrazone              | Meto + Sulf               | FMC/Syngenta          | 6.3 + 0.7 EC                                | Authority<br>Elite/Broadaxe XC                        |
| Metribuzin                                 | Metr                      | Bayer/UPI             | 4 F, 75 DF                                  | Sencor, Tricor,<br>several                            |
| Metribuzin + Sulfentrazone                 | Metr + Suen               | FMC                   | 0.27+0.187 WDG                              | Authority MTZ   |
| Metsulfuron                                | Mets                      | Bayer                 | 60 DF                                       | Ally, Escort,<br>Cimarron                             |
| Metsulfuron+Thifensulfuron+Fluroxypyr      | Mets+thif+Flox,<br>STD 71 | FMC                   | 0.025+0.25+1.3 OD                           | Travallas   |
| Nicosulfuron                               | Nico                      | Corteva               | 54.5 DF                                     | Accent Q  |
| Nicosulfuron + Rimsulfuron                 | Nico + Rims               | Corteva               | 50 + 25 DF                                  | Steadfast   |
| Oxyfluorfen                                | Oxyf                      | Corteva               | 2 EC/4 WBF                                  | Goal/Goal Tender                                      |
| Paraquat                                   | Para                      | Several               | 2.5 S                                       | Several   |
| Pendimethalin                              | Pend                      | BASF<br>Tenkoz<br>UPI | 3.8 ACS<br>3.3 EC                           | Prowl / H <sub>2</sub> O<br>Acumen<br>Satellite       |
| Picloram                                   |                           | Corteva               | 2 S   | Tordon 22K  |
| Pinoxaden                                  | Pxdn                      | Syngenta              | 0.83 EC                                     | Axial   |
| Pinoxaden + Fenoxaprop                     | Pxdn +Fenx                | Syngenta              | 0.42 + 0.42 EC                              | Foxfire   |
| Pinoxaden + Florasulam                     | Pxdn + Flsm               | Syngenta              | 0.774 + 0.0645                              | Axial TBC   |
| Pinoxaden + Fluroxypyr                     | Pxdn + Flox               | Syngenta              | 0.42 + 0.73 EC                              | Axial Star  |
| Propoxycarbazone                           | Prcz                      | Bayer                 | 70 WDG                                      | Olympus   |
| Propoxycarbazone + Mesosulfuron            | Prcz + Mess               | Bayer                 | 6.75 + 4.5 WDG                              | Olympus Flex  |



|  |                    |                |                       |                                |
|--|--------------------|----------------|-----------------------|--------------------------------|
| Pyrasulfotole + bromoxynil +Safener + Fenoxaprop | Pyst + Brox + Renx | Bayer          | 1.32 EC               | Wolverine                      |
| Pyroxasulfone                                    | Pxsf               | BASF           | 85 WG                 | Zidua                          |
| Pyroxasulfone + saflufenacil + imazethapyr       | Pxsf + Saff + Imep | BASF           | 2.28 + 0.48 + 1.33 SC | Zidua Pro                      |
| Pyroxasulfone+Sulfentrazone                      | Pxsf+Suen          | FMC            | 2.08+2.08 SC          | Authority Supreme              |
| Pyraflufen                                       | pyff               | Gowan          | 0.21 EC               | ET/Vida                        |
| Pyroxsulam                                       | Pxlm               | Corteva        | 7.5 WG<br>21.5 WDG    | PowerFlex<br>Team Mate         |
| Pyroxsulam + Fluroxypyr                          | Pxlm + flox        | Corteva        | 0.107+0.95 SE         | OpenSky                        |
| Pyroxsulam+Clopyralid+ Fluroxypyr                | Pxlm+Clpy+Flox     | Corteva        | 1.66 SE               | Perfect Match                  |
| Pyroxsulam + Florasulam + Fluroxypyr             | Pxlm + Flas + Flox | Corteva        | 0.838L                | Goldsky                        |
| Quinclorac                                       | Quin               | BASF           | 75 WP                 | Facet                          |
| Quizalofop-P                                     | Qufp-P             | Corteva, Gowan | 0.88 EC               | Assure II, Targa               |
| Rimsulfuron + Mesotrione                         | Rims + Meso        | Corteva        | 4.17 + 41.67 WDG      | Instigate                      |
| Rimsulfuron + Mesotrione                         | Rims + Meso        | Corteva        | 7.5 + 31.25 SG        | Realm Q                        |
| Rimsulfuron + Thifensulfuron                     | Rims + Thif        | Corteva        | 16.7 + 16.7 SG        | Alluvex                        |
| Rimsulfuron + Thifensulfuron                     | Rims + Thif,       | Corteva        | 75 DF                 | Basis                          |
| Rimsulfuron + Thifensulfuron                     | Rims + Thif        | Corteva, Adama | 18.4 + 4 SG           | Resolve Q                      |
| Rimsulfuron                                      | Rims               | Corteva        | 25 DF                 | Matrix / Resolve               |
| Saflufenacil                                     | BAS 800 04, Saff   | BASF           | 2.85 SC               | Sharpen                        |
| Saflufenacil + dimethenamid-P                    | Saff + dime        | BASF           | 5.57 EC               | Verdict                        |
| Sethoxydim                                       | Seth               | BASF           | 1.5 EC                | Poast                          |
| Simazine   |                    | Syngenta       | 4 L                   | Princep 4L                     |
| Sulfentrazone                                    | Suen               | FMC            | 75 DF                 | Authority, Spartan,<br>Payload |
| Sulfentrazone + Cloransulam                      |                    | FMC, Corteva   | 70 WDG                | Authority First, Sonic         |
| Sulfentrazone + Imazethapyr                      | Suen = Imep        | FMC            | 3.33 + 0.67 L         | Authority Assist               |
| Sulfometuron                                     | Sume               | Bayer          | 75 DF                 | Oust                           |
| Sulfosulfuron                                    | Sulf               | Bayer          | 75 WG                 | Maverick, Outrider             |
| Tebuthiuron                                      |                    | Corteva        | 20 WG                 | Spike                          |
| Tembotrione + isoxadifen safener                 | AE172747, Temb     | Bayer          | (2:1) 3.5 SL          | Laudis                         |
| Tembotrione + Thiencazone                        | Temb + Thcz        | Bayer          | 2.88 + 0.57 SC        | Capreno                        |
| Thiencazone                                      | Thcz               | Bayer          | 0.083 OD              | Varro                          |
| Thifensulfuron+Fluroxypyr                        | Thif+Flox          | FMC            | 0.25+1.3 OD           | Sentrallas                     |
| Thifensulfuron + Tribenuron                      | Thif + Trib        | FMC            | 50 + 25 DF            | Several                        |
| Thifensulfuron + Tribenuron                      |                    | FMC            | 25 + 25 SP            | Affinity<br>Broad Spectrum     |
| Thifensulfuron + Tribenuron                      |                    | FMC            | 40 + 10 SP            | Affinity Tankmix               |
| Thifensulfuron + Tribenuron + Fluroxypyr         | Thif + Pinn + Flox | UPI            | 4.5 + 1.5 + 25 EG     | Supremacy                      |
| Thifensulfuron                                   | Thif, Pinn ,Pncl   | FMC, Corteva   | 75 DF                 | Several                        |

|                              |                     |            |                    |                 |
|------------------------------|---------------------|------------|--------------------|-----------------|
| Tolpyralate                  | Tolp                | SummitAgro | 3.33 EC            | Shieldex        |
| Topramezone                  |                     | AMVAC      | 2.8 SC             | Impact          |
| Topramezone+Atrazine         | Topr+Atra           | AMVAC      | 0.26+4 SC          | Impact Z        |
| Topramezone + dimethenamid   | Topr + Dime         | BASF       | 0.1 + 5.25 SC      | Armezon Pro     |
| Tralkoxydim                  | Tral                | Syngenta   | 40 DF              | Achieve         |
| Triallate                    | GWN 3040, Tria      | Gowan      | 4EC                | Far-Go          |
| Tribenuron                   | Trib                | FMC        | 75 DF              | Several         |
| Triclopyr                    | Trcp                | Corteva    | 4 EC               | Garlon / Remedy |
| Trifluralin                  | Trif                | Several    | 4 EC, 10 G         | Several         |
| Triflusulfuron-methyl        | Tfsu                | FMC        | 50 DF              | UpBeet          |
| 2,4-D                        | 2,4-D               | Various    | Various EC, S, WSP | Several         |
| 2,4-D -choline               | 2,4-D               | Corteva    | 3.8 SL             | Enlist One      |
| 2,4-DB                       | 2,4-DB              | Various    |                    | Several         |
| 2,4-D + Dicamba              | 2,4-D + dica        | NuFarm     | 3.07+1 EC          | BurnMaster      |
| 2,4-D-dma + Dicamba–dma salt |                     | Winfield   | 2.87 + 1 SL        | Brash           |
| 2,4-D + Dicamba + Fluroxypyr | 2,4-D + dica + flox | NuFarm     | 3.02 + 1 + 0.75 EC | Scorch          |
| 2,4-D + Glyphosate           |                     | Corteva    | 3.33 SL            | Enlist Duo      |

<sup>a</sup>Abbreviations in the tables may consist of only the first one, two, or three listed letters when space was limited. Abbreviations of numbered compounds vary with available space, but usually use the first letters and numbers.

## Herbicide Spray Adjuvants

|   |                 |                 |                    |  |                |           |                   |
|---|-----------------|-----------------|--------------------|--|----------------|-----------|-------------------|
| <b>Fertilizer</b>                                       |                 |                 |                    | Flame  | Loveland       | \$40.00 G | 0.5% v/v          |
| AMS (Dry)   | Various         | \$0.35 lb       | 4 to 8.5 lb/A      | N-Tense  | West Central   | \$25.00 G | 0.25 to 0.75% v/v |
| AMS (liquid)  | Various         | \$6.00 G        | 2 to 4 qt/A        | Transport Ultra  | Precision Labs | \$25.00 G | 0.25 to 0.75% v/v |
| 28% UAN   | Various         | \$10.00 G       | 2 to 4 qt/A        | <b>Surfactant &amp; AMS &amp; AMS Replacement (WCA)</b>          |                |           |                   |
| 28% UAN (bulk)  | Various         | \$3.00 G        | 2 to 4 qt/A        | Bronc Total  | Wilbur-Ellis   | \$30.00 G | 0.75 to 1% v/v    |
|   |                 |                 |                    | Transport  | Precision Labs | \$34.00 G | 0.5 % v/v         |
| <b>Surfactant</b>                                       |                 |                 |                    | <b>Acidic AMS Replacement (WCA)</b>                              |                |           |                   |
| Activator 90  | Loveland        | \$28.00 G       | 0.25 to 0.5% v/v   | AMADS - Monocarbamide dihydrogen sulfate or urea + sulfuric acid |                |           |                   |
| APSA-80   | Amway           | \$32.00 G       | 0.25 to 0.5% v/v   | Brimstone  | Wilbur-Ellis   | \$34.00 G | 3 pt/100 G        |
| ChemSurf 90   | United Suppl.   | \$27.00 G       | 0.25 to 0.5% v/v   | CT-301   | Cheltec        | \$ - G    | 4-8 fl oz/100 G   |
| Crnblt Premier 90                                       | West Central    | \$25.00 G       | 0.25 to 0.5% v/v   | ET-4000  | MK Ag Service  | \$31.00 G | 4 pt/100 G        |
| Induce  | Helena          | \$25.00 G       | 0.25 to 0.5% v/v   | Gun Smoke  | Loveland       | \$35.00 G | 3 to 4 pt/100 G   |
| Liberate LeciTech                                       | Loveland        | \$32.00 G       | 0.25 to 0.5% v/v   | Hel-Fire   | Helena         | \$35.00 G | 3 to 4 pt/100 G   |
| Pen-A-trate II  | Precision Labs  | \$30.00 G       | 0.25 to 0.5% v/v   | Import   | Precision Labs | \$34.00 G | 3 to 4 pt/100 G   |
| Permeate  | Winfield United |                 | 0.25% V/V          | N Go/N Tank  | Adjuvants Plus | \$34.00 G | 3 to 4 pt/100 G   |
| Prefer 90   | West Central    | \$28.00 G       | 0.25 to 0.5% v/v   | <b>Basic pH Blend</b>  |                |           |                   |
| Preference  | Winfield        | \$28.00 G       | 0.25 to 0.5% v/v   | Linkage  | West Central   | \$19.00 G | 1% v/v            |
| Protux  | Precision Labs  | \$96.00 G       | 0.125% v/v         | Mycrimix Plus  | J.R. Simplot   | \$19.00 G | 1% v/v            |
| Purity 100  | Rosens          | \$21.00 G       | 0.25 to 0.5% v/v   | Quad 7   | Loveland       | \$15.50 G | 1% v/v            |
| R-11  | Wilbur-Ellis    | \$27.00 G       | 0.25 to 0.5% v/v   |  |                |           |                   |
| Translate   | United Suppl.   | \$30.00 G       | 0.25 to 0.5% v/v   |  |                |           |                   |
| Wet-Sol 99  | Schaeffers      | \$30.00 G       | 0.25 to 0.5% v/v   |  |                |           |                   |
| <b>NIS Approved for use in Water</b>                    |                 |                 |                    |  |                |           |                   |
| Surfactants approved for use in bodies of water are:    |                 |                 |                    |  |                |           |                   |
| Activate Plus   | Agridex         | BroncPlusDryEDT |                    | <b>Petroleum Oil Concentrate</b>                                 |                |           |                   |
| Class Act NG  | Induce          | Level 7         |                    | Agri-Dex   | Helena         | \$16.00 G | 2 to 4 pt/A       |
| Liberate L-Tech   | Preference      | R-11            |                    | Crop Oil Concen.   | Helena         | \$ - G    | 2 to 4 pt/A       |
| Top Surf  | X-77            |                 |                    | Herbimax   | Loveland       | \$12.00 G | 2 to 4 pt/A       |
|   |                 |                 |                    | Ortech   | Rosens         | \$7.50 G  | 2 to 4 pt/A       |
| <b>Surfactant &amp; Silicone</b>                        |                 |                 |                    | Premium Crop Oil   | United Suppl.  | \$10.00 G | 2 to 4 pt/A       |
| Freeway   | Loveland        | \$95.00 G       | 0.75 to 2 pt/100 G | Premium COC  | West Central   | \$10.00 G | 2 to 4 pt/A       |
| Kinetic   | Helena          | \$121.00 gl     | 0.75 to 2 pt/100 G | Prime Oil  | Winfield       | \$10.00 G | 2 to 4 pt/A       |
| Silkin  | Winfield        | \$96.00 G       | 0.75 to 2 pt/100 G | Protux Aerial  | Precision Labs | \$22.00 G | 0.5 pt/A          |
| Speed   | Precision Labs  | \$96.00 G       | 0.25 to 2 pt/100 G | ROC Crop Oil   | Wilbur-Ellis   | \$12.00 G | 2 to 4 pt/A       |
| Sur-Plus  | United Suppl.   | \$87.00 G       | 0.5 to 2 pt/100 G  | <b>Methylated Seed Oil (MSO)</b>                                 |                |           |                   |
| Sylgard 309   | Wilbur-Ellis    | \$120.00 gl     | 0.75 to 2 pt/100 G | Adigor   | Syngenta       | w/Axial   | 9.6 fl oz/A       |
|   |                 |                 |                    | MSO Leci-Tech  | Loveland       | \$18.00 G | 1 to 2 pt/A       |
| <b>Surfactant &amp; AMS</b>                             |                 |                 |                    | MSO Ultra  | Precision Labs | \$20.00 G | 1 to 2 pt/A       |
| Bronc PlusDryEDT  | Wilbur-Ellis    | \$1.85 lb       | 10 lb/100 G        | Persist Ultra  | J.R. Simplot   | \$20.00 G | 1 to 2 pt/A       |
| Class Act NG  | Winfield        | \$11.00 G       | 2.5% v/v           | Premium MSO  | Helena         | \$18.00 G | 1 to 2 pt/A       |
| Deliver   | Precision Labs  | \$10.00 G       | 2.5% v/v           | Soy-Stik   | West Central   | \$18.00 G | 1 to 2 pt/A       |
| Impressive DB   | Rosens          | \$0.90 lb       | 2.25 lb/A          | Succeed  | United Suppl.  | \$17.00 G | 1 to 2 pt/A       |
| Powerhouse  | Rosens          | \$7.25 G        | 5 to 10 qt/100 G   | Sundance II  | Rosens         | \$16.00 G | 1 to 2 pt/A       |
| Surfate   | Loveland        | \$14.50 G       | 1% v/v             | Superspread MSO  | Wilbur-Ellis   | \$21.00 G | 1 to 2 pt/A       |
| Ultra Surf AMS  | United Suppl.   | \$10.00 G       | 2.5% v/v           | Upland MSO   | West Central   | \$20.00 G | 1 to 2 pt/A       |
|   |                 |                 |                    | <b>High Surfactant Oil Concentrate</b>                           |                |           |                   |
| <b>AMS Replacement / Water Conditioning Agent (WCA)</b> |                 |                 |                    | Between (PO)   | United Suppl.  | \$15.00 G | 1 to 2 pt/A       |
| Citron  | Farm Direct     | \$3.25 lb       | 2.2 lb/100 G       | Destiny HC (MSO)   | Winfield       | \$34.00 G | 1 to 2 pt/A       |
| Cut-Rate  | Wilbur-Ellis    | \$1.25 lb       | 4 lb/100 G         | Diplomat (PO)  | Rosens         | \$11.50 G | 1 to 2 pt/A       |
| Quest/Request   | Helena          | \$20.00 G       | 0.5% v/v           | Exchange (PO)  | Precision Labs | \$22.00 G | 1 to 2 pt/A       |
| Speedway  | United Suppl.   | \$32.00 G       | 0.5% v/v           | Hi-Load (PO)   | Simplot        | \$ - G    | 1 to 2 pt/A       |
|   |                 |                 |                    | High Load (PO)   | Wilbur-Ellis   | \$20.00 G | 1 to 2 pt/A       |
| <b>AMS &amp; WCA (AMS Replacement)</b>                  |                 |                 |                    | Kixyt (MSO)  | Precision Labs | \$32.50 G | 1 to 2 pt/A       |
| Alliance  | Winfield        | \$14.00 G       | 1.25% v/v          | Savvy (MSO)  | West Central   | \$29.00 G | 1 to 2 pt/A       |
| Bronc Max   | Wilbur-Ellis    | \$24.00 G       | 0.5% v/v           | Stake (PO)   | West Central   | \$16.50 G | 1 to 2 pt/A       |
| Choice W-Master   | Loveland        | \$20.00 G       | 0.5% v/v           | Superb HC (PO)   | Winfield       | \$20.00 G | 1 to 2 pt/A       |
| Enact   | Rosens          | \$18.00 G       | 0.5% v/v           | <b>Oil Based Surfactant</b>                                      |                |           |                   |
| Sequester   | Hefty           | \$24.00 G       | 0.25 to 0.5% v/v   | Trophy Gold  | West Central   | \$32.00 G | 0.5 pt/A          |
|   |                 |                 |                    | <b>Base Oil, Surfactant &amp; WCA</b>                            |                |           |                   |
| <b>Surfactant &amp; AMS Replacement (WCA)</b>           |                 |                 |                    | Simplyx  | Precision Labs | \$ - G    | 0.5 pt/A          |
| Fastrack  | United Suppl.   | \$25.00 G       | 0.75% v/v          |  |                |           |                   |

| <b>MSO &amp; Basic pH Blend</b> |              |           |             |
|---------------------------------|--------------|-----------|-------------|
| Base                            | West Central | \$26.00 G | 1 to 2 pt/A |
| Entro                           | Various      | \$26.00 G | 1 to 2 pt/A |
| Renegade                        | Wilbur-Ellis | \$23.00 G | 1 to 2 pt/A |

| <b>MSO &amp; AMS Replacement (WCA)</b> |          |           |          |
|--|----------|-----------|----------|
| SuperCharge                            | Syngenta | w/Achieve | 0.5% v/v |

| <b>MSO &amp; Organosilicone Surfactant</b> |               |           |                |
|--|---------------|-----------|----------------|
| Air Force                                  | United Suppl. | \$44.00 G | 4 to 6 fl oz/A |
| Dyne-Amic                                  | Helena        | \$51.50 G | 4 to 6 fl oz/A |
| Rivet                                      | Winfield      | \$44.00 G | 4 to 6 fl oz/A |
| Syl-tac                                    | Wilbur-Ellis  | \$59.00 G | 4 to 6 fl oz/A |

| <b>AMS &amp; Drift Retardant</b> |               |           |                   |
|----------------------------------|---------------|-----------|-------------------|
| AMS 20/10                        | United Suppl. | \$1.60 lb | 10 lb/100 G       |
| Corral AMS Dry                   | Winfield      | \$1.60 lb | 10 to 17 lb/100 G |

| <b>AMS &amp; Defoamer</b> |                |          |               |
|---------------------------|----------------|----------|---------------|
| Omnix LDF                 | Precision Labs | \$4.60 G | 2.5 to 5% v/v |

| <b>AMS &amp; Deposition &amp; Defoamer</b> |               |           |                   |
|--|---------------|-----------|-------------------|
| AMS 2000                                   | United Suppl. | \$1.25 lb | 10 to 17 lb/100 G |
| AmSol Plus                                 | United Suppl. | \$6.00 G  | 2.5 G/100 G       |
| Arrow Four                                 | Winfield      | \$22.00 G | 2 to 4 qt/100 G   |
| Cornbelt Dri-Gard                          | West Central  | \$1.50 lb | 9 lb/100 G        |
| Crnbt Gardian Pls                          | West Central  | \$6.50 G  | 2.5 G/100 G       |
| Double Down                                | United Suppl. | \$8.00 G  | 2.5 G/100 G       |

| <b>AMS &amp; Deposition/Retention &amp; Defoamer</b> |                |           |                   |
|--|----------------|-----------|-------------------|
| Array  | Rosens         | \$1.60 lb | 9 to 14 lbs/100 G |
| Border Xtra DF                                       | Precision Labs | \$1.60 lb | 18 lb/100 G       |
| Border Xtra 4L                                       | Precision Labs | \$5.00 G  | 5% v/v            |
| Border Xtra 8L                                       | Precision Labs | \$8.00 G  | 2.5% v/v          |
| Vector   | Rosens         | \$5.20 lb | 2 lb/100 G        |

| <b>AMS &amp; Surfactant &amp; Deposition/Retention &amp; Defoamer</b> |               |             |                   |
|---|---------------|-------------|-------------------|
| One-Ap XL   | West Central  | \$1.85 lb   | 9 to 15 lb/100 G  |
| BroncPlus DryEDT  | Wilbur-Ellis  | \$1.8560 lb | 10 lb/100 G       |
| Bronc Triple  | Wilbur-Ellis  | \$34.00 G   | 2 qt/100 G        |
| Pay Off Plus  | United Suppl. | \$2.00 lb   | 10 to 13 lb/100 G |
| Zenith  | Rosens        | \$1.25 lb   | 1.5 to 2.25 lb/A  |

| <b>AMS &amp; AMS Replacement (WCA) &amp; Deposition</b> |                |           |                 |
|---|----------------|-----------|-----------------|
| Bronc Max EDT   | Wilbur-Ellis   | \$36.00 G | 2 to 3 qt/100 G |
| Cornbelt Gardian  | West Central   | \$22.00 G | 2 to 3 qt/100 G |
| Transport Plus  | Precision Labs | \$30.00 G | 2 to 4 qt/100 G |

| <b>AMS &amp; AMS Replacement (WCA) &amp; Surfactant &amp; Deposition/Retention &amp; Defoamer</b> |              |           |            |
|---|--------------|-----------|------------|
| Veracity  | West Central | \$23.00 G | 3 qt/100 G |

| <b>AMS Replacement (WCA) &amp; Surfactant &amp; Deposition/Retention &amp; Defoamer</b> |          |           |                 |
|---|----------|-----------|-----------------|
| Weather-Gard  | Loveland | \$50.00 G | 1 to 2 qt/100 G |
| Complete Leci-Tec   |          |           |                 |

| <b>AMS Replacement (WCA) &amp; Deposition/Retention &amp; Defoamer</b> |               |           |                 |
|--|---------------|-----------|-----------------|
| Formula 1  | United Suppl. | \$30.00 G | 1 to 3 qt/100 G |

| <b>Deposition/Retention - Drift Retardants</b> |                |            |                         |
|--|----------------|------------|-------------------------|
| Affect GC                                      | United Suppl.  | \$40.00 qt | 1 to 2 fl oz/100 G      |
| Border EG 250                                  | Precision Labs | \$1.00 oz  | 10 oz/100 G             |
| Corral Poly                                    | Winfield       | \$25.00 qt | 4 to 12 fl oz/100 G     |
| Coverage G-20                                  | Wilbur-Ellis   | \$32.00 G  | 2 to 4 fl oz/A          |
| Direct   | Precision Labs | \$25.00 qt | 1 to 4 oz/100 G         |
| Drift Down                                     | Rosens         | \$15.00 qt | 4 to 8 fl oz/100 G      |
| In-Place                                       | Wilbur-Ellis   | \$36.00 G  | 4 fl oz/pt-lb herbicide |
| InterLock                                      | Winfield       | \$45.00 G  | 4 to 6 fl oz/A          |
| Placement                                      | Winfield       | \$38.00 G  | 4 fl oz/pt-lb herbicide |
| Shroud II                                      | United Suppl.  | \$15.00 qt | 10 to 12 oz/100 G       |

| <b>Deposition/Retention &amp; Surfactant &amp; Drift Retardant</b> |          |           |              |
|--|----------|-----------|--------------|
| Powerlock  | Winfield | \$44.00 G | 5 to 8 oz/Al |

| <b>Drift Retardant &amp; Defoamer</b> |              |           |            |
|---------------------------------------|--------------|-----------|------------|
| Compadre Leci-Tc                      | Loveland     | \$55.00 G | 1 pt/100 G |
| Sedate                                | West Central | \$35.00 G | 1 pt/100 G |

| <b>Acidifying Agents</b> |               |           |                   |
|--------------------------|---------------|-----------|-------------------|
| Complete                 | Winfield      | \$35.00 G | 1 to 3 pt/100 G   |
| Indicate 5               | United Suppl. | \$48.00 G | 2 to 4 pt/100 G   |
| LI-700 Leci-Tech         | Loveland      | \$28.00 G | 2 to 4 pt/100 G   |
| New Balance              | Precision Lab | \$32.00 G | 2 to 4 pt/100 G   |
| SuperSpread 7000         | Wilbur-Ellis  | \$32.00 G | 0.5 to 2 pt/100 G |
| Tri-Fol                  | Wilbur-Ellis  | \$30.00 G | 0.5 to 2 pt/100 G |

| <b>Compatibility Agents</b> |                |           |                 |
|-----------------------------|----------------|-----------|-----------------|
| CompatibilityAgent          | West Central   | \$30.00 G | 1 to 3 pt/100 G |
| Complete                    | Winfield       | \$35.00 G | 1 to 3 pt/100 G |
| Convert                     | Precision Labs | \$35.00 G | 1 to 6 pt/100 G |
| Embrace                     | Wilbur-Ellis   | \$36.00 G | 1 to 4 pt/100 G |
| EZ-Mix                      | Loveland       | \$30.00 G | 1 to 4 pt/100 G |
| Mix-All                     | Rosens         | \$35.00 G | 1 to 4 pt/100 G |
| Compatibility Plus          | United Suppl.  | \$41.50 G | 1 to 2 pt/100 G |

| <b>Spray Tank Cleaners</b> |         |             |                 |
|----------------------------|---------|-------------|-----------------|
| Tank Cleaner               | Various | \$15-35 qt  | 1 to 2 qt/100 G |
| Tank Cleaner               | Various | \$5-7.00 lb | 1 to 2 lb/100 G |

## NORTH DAKOTA ADJUVANT COMPENDIUM

For other adjuvants: [www.herbicide-adjuvants.com/](http://www.herbicide-adjuvants.com/)

| <b>Nonionic Surfactant (NIS)</b> |                |            |                 |
|----------------------------------|----------------|------------|-----------------|
| Activator 90                     | Loveland       | \$32.00/G  | 0.25 - 0.5% v/v |
| APSA-80                          | Amway          | \$32.00/G  | 0.25 - 0.5% v/v |
| ChemSurf                         | United Suppl.  | \$32.00/G  | 0.25 - 0.5% v/v |
| Wetcit                           | Oro Agri       | \$75.00/G  | 0.25 - 0.5% v/v |
| Haf-Pynt                         | Drexel         | \$31.00/G  | 0.25 - 0.8% v/v |
| Hypertonic                       | CHS            | \$33.00/G  | 0.25 - 0.5% v/v |
| Induce                           | Helena         | \$31.00/G  | 0.25 - 0.5% v/v |
| Insist 90                        | Wilbur-Ellis   | \$24.00/G  | 0.25 - 0.5% v/v |
| K-Tone                           | West Central   | \$33.00/G  | 0.25 - 0.5% v/v |
| Liberate LeciTech                | Loveland       | \$44.00/G  | 0.25 - 0.5% v/v |
| Pen-A-trate II                   | Precision Labs | \$32.00/G  | 0.25 - 0.5% v/v |
| Prefer 90                        | West Central   | \$33.00/G  | 0.25 - 0.5% v/v |
| Preference                       | Winfield       | \$35.00/G  | 0.25 - 0.5% v/v |
| Protyx                           | Precision Labs | \$100.00/G | 0.125% v/v      |
| R-11                             | Wilbur-Ellis   | \$32.00/G  | 0.25 - 0.5% v/v |
| Rainier EA                       | Wilbur-Ellis   | \$37.00/G  | 0.25 - 0.5% v/v |
| Surf-AC 910                      | Drexel         | \$25.00/G  | 0.25 - 0.5% v/v |
| Tradition 93                     | Rosens         | \$-/G      | 0.25 - 0.5% v/v |
| Translate                        | United Suppl.  | \$38.00/G  | 0.25 - 0.5% v/v |
| Wet-Sol 99                       | Schaeffers     | \$28.00/G  | 0.25 - 0.5% v/v |

### NIS Approved for us in water

Surfactants approved for use in bodies of water are:

|               |                 |              |      |
|---------------|-----------------|--------------|------|
| Activate Plus | AgriDex         | Class Act NG |      |
| Level 7       | Liberate L-Tech | Preference   | R-11 |
| Top Surf      | X-77            | Induce       |      |

### Surfactant & Silicone

|          |                |                   |                     |
|----------|----------------|-------------------|---------------------|
| Freeway  | Loveland       | \$110.00/G        | 0.75 to 2 pt./100 G |
| Kinetic  | Helena         | \$115.00/G        | 0.75 to 2 pt./100 G |
| Sil-Fact | Drexel         | \$45.00/G         | 0.75 to 2 pt./100 G |
| Silkin   | Winfield       | \$100.00/G        | 0.75 to 2 pt./100 G |
| Speed    | Precision Labs | \$135.00/G        | 0.75 to 2 pt./100 G |
| Sur-Plus | United Suppl.  | \$87.00/G         | 0.5 to 2 pt./100 G  |
| Sylcoat  | Wilbur-Ellis   | <b>\$122.00/G</b> | 0.75 to 2 pt./100 G |

### Surfactant & Deposition/Retention (Drift Retardant)

|              |              |           |                |
|--------------|--------------|-----------|----------------|
| Cerium Elite | West Central | \$41.00/G | 1 qt/100 G     |
| Fixate Pro   | West Central | \$41.00/G | 1 qt/100 G     |
| MasterLock   | Winfield     | \$55.00/G | 5 to 8 fl oz/A |
| Parachute    | West Central | \$42.00/G | 3 to 4 fl oz/A |

### Surfactant & Drift Retardant & Antifoam

|           |          |           |             |
|-----------|----------|-----------|-------------|
| Powerlock | Winfield | \$55.00/G | 5 to 8 oz/A |
|-----------|----------|-----------|-------------|

### Surfactant & Nano-technology (carbon tubes)

|                     |                |           |                |
|---------------------|----------------|-----------|----------------|
| Chem Xcel Gen 3     | C&R Enterprise | \$62.50/G | 22-25 fl oz/G  |
| Nano Excel          | Enviro Science | -         | 2 to 8 fl oz/A |
| Nano-Revolution 3.0 | Max Systems    | \$145.00G | 2 to 8 fl oz/A |

### Petroleum Oil Concentrate (POC/COC)

|                |                |           |             |
|----------------|----------------|-----------|-------------|
| Agri-Dex       | Helena         | \$21.00/G | 1 to 2 pt/A |
| Herbimax       | Loveland       | \$22.00/G | 1 to 2 pt/A |
| Redur Crop Oil | West Central   | \$14.00/G | 1 to 2 pt/A |
| Peptoil        | Drexel         | \$12.00/G | 1 to 2 pt/A |
| Prime Oil      | Winfield       | \$15.00/G | 1 to 2 pt/A |
| Protyx Aerial  | Precision Labs | \$21.00/G | 0.5 pt/A    |
| R-Way          | Rosens         | \$-/G     | 1 to 2 pt/A |
| ROC Crop Oil   | Wilbur-Ellis   | \$15.00/G | 1 to 2 pt/A |

### Crop (Soybean) Oil Concentrate

|         |        |           |             |
|---------|--------|-----------|-------------|
| BeanOil | Drexel | \$15.00/G | 1 to 2 pt/A |
|---------|--------|-----------|-------------|

### High Surfactant Petroleum Oil Concentrate (HSPOC)

|           |                |           |             |
|-----------|----------------|-----------|-------------|
| Between   | United Suppl.  | \$20.00/G | 1 to 2 pt/A |
| Diplomat  | Rosens         | \$21.00/G | 1 to 2 pt/A |
| Exdhange  | Precision Labs | \$26.00/G | 1 to 2 pt/A |
| Hi-Load   | Simplot        | \$26.00/G | 1 to 2 pt/A |
| High Load | Wilbur-Ellis   | \$26.00/G | 1 to 2 pt/A |
| High Mark | Loveland       | \$26.00/G | 1 to 2 pt/A |
| Sitka     | CHS            | \$24.00/G | 1 to 2 pt/A |
| Stake     | West Central   | \$24.00/G | 1 to 2 pt/A |
| Superb HC | Winfield       | \$25.00/G | 1 to 2 pt/A |

### Methylated Seed Oil (MSO)

|                 |                |           |             |
|-----------------|----------------|-----------|-------------|
| Emulate         | CHS            | \$22.00/G | 1 to 2 pt/A |
| Fire-Zone       | Helena         | \$27.00/G | 1 to 2 pt/A |
| Hasten          | Wilbur-Ellis   | \$34.00/G | 1 to 2 pt/A |
| MES-100         | Drexel         | \$15.00/G | 1 to 2 pt/A |
| MSO Leci-Tech   | Loveland       | \$27.00/G | 1 to 2 pt/A |
| MSO Ultra       | Precision Labs | \$26.00/G | 1 to 2 pt/A |
| Noble           | Winfield       | \$23.00/G | 1 to 2 pt/A |
| Persist Ultra   | J.R. Simplot   | \$20.00/G | 1 to 2 pt/A |
| Premium MSO     | Helena         | \$20.00/G | 1 to 2 pt/A |
| Succeed         | United Suppl.  | \$19.00/G | 1 to 2 pt/A |
| Sundance II     | Rosens         | \$21.00/G | 1 to 2 pt/A |
| Superspread MSO | Wilbur-Ellis   | \$27.00/G | 1 to 2 pt/A |
| Upland MSO      | West Central   | \$22.00/G | 1 to 2 pt/A |

### MSO & Organosilicone Surfactant

|             |               |           |                |
|-------------|---------------|-----------|----------------|
| Air Force   | United Suppl. | \$47.00/G | 4 to 6 fl oz/A |
| Dyne-Amic   | Helena        | \$57.00/G | 4 to 6 fl oz/A |
| Inergy      | Winfield      | \$55.00/G | 4 to 6 fl oz/A |
| Sil-MES 100 | Drexel        | \$40.00/G | 4 to 6 fl oz/A |
| Syl-Tac     | Wilbur-Ellis  | \$63.00/G | 4 to 6 fl oz/A |

### MSO & Basic pH Blend

|             |              |           |             |
|-------------|--------------|-----------|-------------|
| Entro       | Various      | \$28.00/G | 1 to 2 pt/A |
| Renegade EA | Wilbur-Ellis | \$30.00/G | 1 to 2 pt/A |

### MSO & Deposition/Retention (Drift Retardant)

|            |          |       |                  |
|------------|----------|-------|------------------|
| StrikeLock | Winfield | \$-/G | 10 to 12 fl pt/A |
|------------|----------|-------|------------------|

### MSO & Surfactant & Deposition/Retention (Drift Retardant)

|        |        |       |                  |
|--------|--------|-------|------------------|
| Plexus | Rosens | \$-/G | 10 to 12 fl oz/A |
|--------|--------|-------|------------------|

### High Surfactant Methylated Oil Concentrate (HSMOC)

|             |                |           |               |
|-------------|----------------|-----------|---------------|
| Cide Winder | Helena         | \$42.00/G | 1 to 1.5 pt/A |
| Destiny HC  | Winfield       | \$40.00/G | 1 to 1.5 pt/A |
| Duce        | Helena         | \$36.00/G | 1 to 1.5 pt/A |
| Glacier EA  | Wilbur-Ellis   | \$50.00/G | 1 to 1.5 pt/A |
| Hot MES     | Drexel         | \$20.00/G | 1 to 1.5 pt/A |
| Kixyt       | Precision Labs | \$44.00/G | 1 to 1.5 pt/A |
| Savvy       | West Central   | \$37.00/G | 1 to 1.5 pt/A |
| Top Shelf   | Loveland       | \$32.00/G | 1 to 1.5 pt/A |
| Woodside    | CHS            | \$37.00/G | 1 to 1.5 pt/A |

**ADJUVANTS CONTAINING AMMONIUM****Ammonium sulfate (AMS)/Urea ammonium nitrate (UAN)****Fertilizer**

|              |         |           |                  |
|--------------|---------|-----------|------------------|
| AMS (Dry)    | Various | \$0.35 lb | 4 to 8.5 lb/100G |
| AMS (liquid) | Various | \$6-9/G   | 2 to 4 qt/A      |
| 28% UAN/bulk | Various | \$3-10/G  | 2 to 4 qt/A      |

**AMS & Surfactant (NIS)**

|                |                |           |                  |
|----------------|----------------|-----------|------------------|
| Cayuse Plus    | Wilbur-Ellis   | \$27.00/G | 2 to 6 qt/100 G  |
| Class Act NG   | Winfield       | \$13.00/G | 2.5% v/v         |
| Class Act Flex | Winfield       | \$15.00/G | 1 to 4% v/v      |
| Deliver        | Precision Labs | \$14.00/G | 2.5% v/v         |
| Impressive DB  | Rosens         | \$1.25/lb | 2.25 lb/A        |
| Powerhouse     | Rosens         | \$12.00/G | 5 to 10 qt/100 G |
| Precinct       | West Central   | \$13.00/G | 2.5% v/v         |
| Re-Duce        | Helena         | \$12.00/G | 1% v/v           |
| Surfate        | Loveland       | \$23.00/G | 1% v/v           |
| Ultra Surf AMS | United Suppl.  | \$10.00/G | 2.5% v/v         |
| Wheelhouse     | CHS            | \$13.00/G | 2.5% v/v         |

**AMS & Drift Retardant (Deposition)**

|                |               |           |                |
|----------------|---------------|-----------|----------------|
| AMS 20/10      | United Suppl. | \$1.60/lb | 10 lb/100 G    |
| Array          | Rosens        | \$2.50/lb | 9 lbs/100 G    |
| Lox Plus       | Drexel        | \$15.00/G | 1 to 2 G/100 G |
| StrikeZone MXD | Helena        | \$5.00/G  | 2 lb/100 G     |
| Vector         | Rosens        | \$7.50/G  | 2 lb/100 G     |

**AMS & Defoamer**

|           |                |          |               |
|-----------|----------------|----------|---------------|
| AMS-Xtra  | Drexel         | \$4.00/G | 2.5 to 5% v/v |
| Omnix LDF | Precision Labs | \$9.00/G | 2.5 to 5% v/v |

**AMS & Deposition & Defoamer**

|                |                |           |               |
|----------------|----------------|-----------|---------------|
| AMS-Supreme    | Drexel         | \$15.00/G | 2.5 to 5% v/v |
| Border Xtra DF | Precision Labs | \$2.00/lb | 18 lbs/100 G  |
| Border Xtra 8L | Precision Labs | \$13.00/G | 2.5% v/v      |
| Drift-Gard     | Rosens         | \$-/G     | 9 lbs/100 G   |

**AMS & Surfactant & Deposition & Defoamer**

|              |               |           |                  |
|--------------|---------------|-----------|------------------|
| AMS-All      | Drexel        | \$11.00/G | 1 to 5 G/100 G   |
| Blue Diamond | NWC,Emerado   | \$15.00/G | 1 to 2 qt/100 G  |
| Bronc Triple | Wilbur-Ellis  | \$43.00/G | 10 lb/100 G      |
| Pay Off Plus | United Suppl. | \$2.00/lb | 10 lb/100 G      |
| Zenith       | Rosens        | \$1.80/lb | 1.5 to 2.25 lb/A |

**AMS & Surfactant & Paraffinic oil**

|       |          |           |          |
|-------|----------|-----------|----------|
| Flame | Loveland | \$42.00/G | 0.5% v/v |
|-------|----------|-----------|----------|

**AMS & WCA\* (AMS Replacement)**

|                 |               |           |                 |
|-----------------|---------------|-----------|-----------------|
| Alliance        | Winfield      | \$18.00/G | 1.25% v/v       |
| Bronc Max       | Wilbur-Ellis  | \$25.00/G | 0.5 to 1% v/v   |
| Choice W-Master | Loveland      | \$30.00/G | 0.5% v/v        |
| Enact           | Rosens        | \$25.00/G | 0.5% v/v        |
| SeQuel          | Helena        | \$17.00/G | 1 to 5 pt/100 G |
| Transport LpH   | Precision Lab | \$20.00/G | 0.5% v/v        |

**AMS & WCA\* & Deposition**

|             |               |           |                   |
|-------------|---------------|-----------|-------------------|
| AMS 2000    | United Suppl. | \$1.25/lb | 10 to 17 lb/100 G |
| AmSol Plus  | United Suppl. | \$6.00/G  |                   |
| Double Down | United Suppl. | \$8.00/G  |                   |
| Rush        | Winfield      | \$25.00/G |                   |

**AMS & WCA\* & Deposition & Defoamer**

|           |        |           |            |
|-----------|--------|-----------|------------|
| Holzit    | Drexel | \$1.60/lb | 9 lb/100 G |
| Stay Down | Rosens | \$-/G     | 5 lb/100 G |

**AMS & WCA\* & Surfactant & Deposition & Defoamer**

|          |              |           |            |
|----------|--------------|-----------|------------|
| Veracity | West Central | \$26.00/G | 3 qt/100 G |
|----------|--------------|-----------|------------|

**Basic pH Blend**

|           |              |           |        |
|-----------|--------------|-----------|--------|
| Axon      | CHS          | \$24.00/G | 1% v/v |
| Linkage   | West Central | \$24.00/G | 1% v/v |
| Newtone   | Winfield     | \$30.00/G | 1% v/v |
| Quad 7    | Loveland     | \$22.00/G | 1% v/v |
| Sequestra | Drexel       | \$24.00/G | 1% v/v |

**Acidic AMS Replacement (contains AMADS)**

AMADS—Monocarbamide dihydrogen sulfate =urea + sulfuric acid

|            |                |           |            |
|------------|----------------|-----------|------------|
| Aduro      | Winfield       | \$32.00/G | 4 pt/100 G |
| Brimstone  | Wilbur-Ellis   | \$42.00/G | 4 pt/100 G |
| ET-4000    | MK Ag Service  | \$31.00/G | 4 pt/100 G |
| Fixate     | CHS            | \$32.00/G | 4 pt/100 G |
| GunSmoke   | Loveland       | \$40.00/G | 4 pt/100 G |
| Hel-Fire   | Helena         | \$36.00/G | 4 pt/100 G |
| Import     | Precision Labs | \$37.00/G | 4 pt/100 G |
| Jackhammer | West Central   | \$32.00/G | 4 pt/100 G |

**Acidic WCA\***

|               |               |           |                 |
|---------------|---------------|-----------|-----------------|
| ET-4000       | MK Ag Service | \$31.00/G | 4 pt/100 G      |
| Regulator 2.0 | Max Systems   | \$22.00/G | 2 to 4 qt/100 G |

**Acidic WCA\* & Surfactant & Base Oil**

|         |                |           |          |
|---------|----------------|-----------|----------|
| Simplyx | Precision Labs | \$40.00/G | 0.5 pt/A |
|---------|----------------|-----------|----------|

\*Non ammonium/non-AMS water conditioning agent

**ADJUVANTS CONTAINING NO AMMONIUM****WCA\* / AMS Replacement**

|                  |               |           |                 |
|------------------|---------------|-----------|-----------------|
| Choice Trio      | Loveland      | \$29.00/G | 0.5% v/v        |
| Citron           | Farm Direct   | \$3.50/lb | 2.2 lb/100 G    |
| Class Act Ridion | Winfield      | \$ -      | 0.5 to 2% v/v   |
| Cut-Rate         | Wilbur-Ellis  | \$2.75/lb | 3 to 4 lb/100 G |
| Quest/Request    | Helena        | \$22.00/G | 0.5% v/v        |
| Speedway         | United Suppl. | \$38.00/G | 0.5% v/v        |

**WCA\* & Surfactant**

|                |                |           |                   |
|----------------|----------------|-----------|-------------------|
| Best Shot      | CHS            | \$ -      | 0.25 to 0.5% v/v  |
| Fastrack       | United Suppl.  | \$28.00/G | 0.75% v/v         |
| Flame          | Loveland       | \$42.00/G | 0.5% v/v          |
| Jackhammer     | West Central   | \$27.00/G | 2 qt/100 G        |
| Elite          |                |           |                   |
| Last Chance    | West Central   | \$ -      | 0.25 to 0.5% v/v  |
| Ransport Ultra | Precision Labs | \$39.00/G | 0.25 to 0.75% v/v |
| Wheelhouse Pro | CHS            | \$27.00/G | 2 qt/100 G        |

**WCA\* & HSMOC**

|      |        |           |        |
|------|--------|-----------|--------|
| Zaar | Helena | \$37.00/G | 1% v/v |
|------|--------|-----------|--------|

**WCA\* & Surfactant & Deposition/Retention & Defoamer**

|                   |              |           |            |
|-------------------|--------------|-----------|------------|
| Strike Force      | Loveland     | \$65.00/G | 2 qt/100 G |
| Trapline Pro      | CHS          | \$62.00/G | 2 qt/100 G |
| Trapline Pro II   | CHSI         | \$51.00/G | 2 qt/100 G |
| Veracity Elite    | West Central | \$62.00/G | 2 qt/100 G |
| Veracity Elite II | West Central | \$51.00/G | 2 qt/100 G |
| Weather-Gard      | Loveland     | \$65.00/G | 2 qt/100 G |
| Complete Leci-Tec |              |           |            |

**WCA\* & Deposition/Retention & Defoamer**

|              |               |           |                 |
|--------------|---------------|-----------|-----------------|
| AccuQuest WM | Helena        | \$36.00/G | 1 to 3 qt/100 G |
| Formula 1    | United Suppl. | \$30.00/G | 1 to 3 qt/100 G |

\*Non ammonium/non-AMS water conditioning agent

**UTILITY ADJUVANTS****Deposition/Retention – Drift Retardants**

|                |                |            |                     |
|----------------|----------------|------------|---------------------|
| Affect GC      | United Suppl.  | \$40.00/qt | 1 to 2 fl oz/100 G  |
| Border EG 250  | Precision Labs | \$1.20/oz  | 10 oz/100 G         |
| Buckhorn Total | CHS            | \$58.00/G  | 2 to 6 fl oz/A      |
| Cognitive 1    | West central   | \$34.00/G  | 2 to 4 qt/100 G     |
| Corral Poly    | Winfield       | \$25.00/qt | 4 to 12 fl oz/100 G |
| Crosshair      | Wilbur-Ellis   | \$51.00/G  | 4 fl oz/A           |
| Direct         | Precision Labs | \$34.00/qt | 1 to 4 oz/100 G     |
| In-Place       | Wilbur-Ellis   | \$51.00/G  | 4 fl oz/pt-lb       |
| InterLock      | Winfield       | \$60.00/G  | Herbicide           |
| Lox            | Drexel         | \$25.00/G  | 4 to 6 fl oz/A      |
| Placement      | Winfield       | \$45.00/G  | 4 to 8 fl oz/A      |
| Point Blank    | Helena         | \$42.00/qt | 2 to 6 fl oz/100 G  |
| Sedate Max     | West Central   | \$58.00/G  | 2 to 6 fl oz/A      |

**Deposition/Retention & Defoamer**

|                  |          |           |            |
|------------------|----------|-----------|------------|
| Compadre Leci-Tc | Loveland | \$58.00/G | 1 pt/100 G |
|------------------|----------|-----------|------------|

**Acidifying Agents**

|                  |               |           |                   |
|------------------|---------------|-----------|-------------------|
| BS-500           | Drexel        | \$17.00/G | 2 to 4 pt/100 G   |
| Complete         | Winfield      | \$44.00/G | 1 to 3 pt/100 G   |
| Denali EA        | Wilbur-Ellis  | \$35.00/G | 0.4 to 4 pt/100 G |
| Indicate 5       | United Suppl. | \$48.00/G | 2 to 4 pt /100 G  |
| Induce pH        | Helena        | \$37.00/G | 2 to 4 pt /100 G  |
| LI-700 Leci-Tech | Loveland      | \$39.00/G | 2 to 4 pt /100 G  |
| New Balance      | Precision Lab | \$44.00/G | 2 to 4 pt /100 G  |
| SuperSpread 7000 | Wilbur-Ellis  | \$31.00/G | 0.5 to 2 pt/100 G |
| Sequestra        | Drexel        | \$24.00/G | 1 to 5 G/100 G    |
| Tri-Fol          | Wilbur-Ellis  | \$36.00/G | 0.5 to 4 pt/100 G |

**Compatibility Agents**

|                     |                |           |                 |
|---------------------|----------------|-----------|-----------------|
| Blendex             | Helena         | \$55.00/G | 1 to 5 pt/100 G |
| Compatibility Agent | West Central   | \$35.00/G | 1 to 3 pt/100 G |
| Complete            | Winfield       | \$44.00/G | 1 to 3 pt/100 G |
| Convert             | Precision Labs | \$50.00/G | 1 to 6 pt/100 G |
| EZ-Mix              | Loveland       | \$38.00/G | 1 to 4 pt/100 G |
| Mix                 | Drexel         | \$20.00/G | 1 to 4 pt/100 G |
| Mix-All             | Rosens         | \$45.00/G | 1 to 4 pt/100 G |
| Compatibility Plus  | United Suppl.  | \$41.50/G | 1 to 2 pt/100 G |

**Spray Tank Cleaners**

|              |         |             |                 |
|--------------|---------|-------------|-----------------|
| Tank Cleaner | Various | \$12-25 qt  | 1 to 2 qt/100 G |
| Tank Cleaner | Various | \$5-7.00 lb | 1 to 2 lb/100 G |

**CLIMATIC DATA, 2019 FARGO, ND**

| Date             | Precipitation |             |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.09        | 0.00        | 0.00        | 0.00        | 0.00        | 40        | 29        | 44        | 38        | 71        | 44        | 83        | 66        | 86        | 65        | 73        | 61        |
| 2                | 0.00          | 0.02        | 0.00        | 0.00        | 0.59        | 0.49        | 40        | 30        | 57        | 34        | 74        | 48        | 87        | 63        | 83        | 68        | 74        | 55        |
| 3                | 0.00          | 0.03        | 0.00        | 0.13        | 0.00        | 0.00        | 36        | 24        | 64        | 41        | 89        | 58        | 86        | 65        | 85        | 68        | 66        | 50        |
| 4                | 0.00          | 0.00        | 0.01        | 0.00        | 0.00        | 0.00        | 40        | 29        | 54        | 37        | 92        | 65        | 79        | 61        | 85        | 66        | 71        | 47        |
| 5                | 0.01          | 0.00        | 0.00        | 0.02        | 0.15        | 0.01        | 45        | 36        | 53        | 33        | 83        | 59        | 75        | 61        | 82        | 66        | 77        | 56        |
| 6                | 0.00          | 0.00        | 0.04        | 0.00        | 0.00        | 0.00        | 53        | 39        | 48        | 28        | 88        | 64        | 75        | 55        | 87        | 61        | 74        | 54        |
| 7                | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.28        | 63        | 41        | 59        | 24        | 96        | 67        | 82        | 54        | 75        | 56        | 58        | 52        |
| 8                | 0.00          | 0.09        | 0.28        | 1.97        | 0.00        | 0.00        | 61        | 39        | 52        | 44        | 92        | 56        | 88        | 65        | 74        | 51        | 67        | 51        |
| 9                | 0.00          | 0.00        | 0.03        | 0.77        | 0.00        | 1.28        | 42        | 28        | 57        | 34        | 70        | 52        | 76        | 64        | 77        | 55        | 63        | 58        |
| 10               | 0.00          | 0.00        | 0.00        | 0.01        | 0.00        | 0.00        | 37        | 28        | 63        | 29        | 74        | 50        | 77        | 62        | 78        | 63        | 67        | 58        |
| 11               | 0.37          | 0.03        | 0.00        | 0.00        | 0.00        | 0.00        | 35        | 26        | 69        | 44        | 79        | 54        | 83        | 59        | 78        | 64        | 66        | 57        |
| 12               | 0.02          | 0.00        | 0.00        | 0.27        | 1.06        | 0.53        | 31        | 26        | 64        | 47        | 67        | 44        | 82        | 67        | 67        | 59        | 59        | 51        |
| 13               | 0.00          | 0.00        | 0.02        | 0.00        | 0.01        | 0.03        | 39        | 24        | 74        | 46        | 75        | 49        | 84        | 69        | 67        | 61        | 65        | 50        |
| 14               | 0.00          | 0.00        | 0.05        | 0.00        | 0.00        | 0.00        | 40        | 23        | 74        | 52        | 83        | 60        | 89        | 70        | 77        | 60        | 69        | 49        |
| 15               | 0.09          | 0.09        | 0.10        | 0.00        | 0.01        | 0.00        | 43        | 31        | 81        | 38        | 67        | 57        | 89        | 73        | 74        | 58        | 85        | 56        |
| 16               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 64        | 35        | 63        | 45        | 69        | 54        | 85        | 67        | 83        | 57        | 88        | 68        |
| 17               | 0.11          | 0.07        | 0.00        | 1.01        | 0.08        | 0.00        | 56        | 43        | 62        | 39        | 65        | 51        | 84        | 67        | 83        | 61        | 89        | 72        |
| 18               | 0.04          | 0.68        | 0.00        | 0.12        | 0.00        | 0.01        | 55        | 39        | 52        | 43        | 73        | 50        | 83        | 66        | 74        | 53        | 80        | 64        |
| 19               | 0.00          | 0.05        | 0.02        | 0.31        | 0.00        | 0.00        | 63        | 34        | 55        | 41        | 75        | 52        | 83        | 66        | 86        | 57        | 82        | 57        |
| 20               | 0.04          | 0.00        | 0.57        | 0.05        | 0.06        | 0.00        | 67        | 46        | 66        | 34        | 69        | 57        | 81        | 63        | 75        | 57        | 89        | 69        |
| 21               | 0.05          | 0.10        | 0.43        | 0.00        | 0.00        | 0.41        | 63        | 47        | 69        | 43        | 75        | 57        | 75        | 57        | 73        | 51        | 79        | 56        |
| 22               | 0.00          | 0.86        | 0.32        | 0.00        | 0.00        | 0.00        | 65        | 44        | 52        | 46        | 64        | 57        | 79        | 53        | 76        | 51        | 70        | 51        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 70        | 37        | 57        | 46        | 78        | 56        | 84        | 60        | 77        | 59        | 78        | 51        |
| 24               | 0.00          | 0.61        | 0.00        | 0.00        | 0.00        | 0.03        | 74        | 50        | 69        | 51        | 78        | 61        | 84        | 64        | 80        | 63        | 75        | 54        |
| 25               | 0.00          | 0.00        | 0.00        | 0.04        | 1.06        | 0.00        | 66        | 38        | 61        | 47        | 80        | 57        | 86        | 67        | 69        | 63        | 66        | 50        |
| 26               | 0.00          | 0.03        | 0.00        | 0.00        | 0.31        | 0.00        | 57        | 30        | 68        | 42        | 87        | 57        | 87        | 63        | 73        | 59        | 64        | 46        |
| 27               | 0.00          | 0.00        | 0.37        | 0.00        | 0.21        | 0.00        | 56        | 40        | 65        | 49        | 79        | 64        | 85        | 63        | 65        | 56        | 58        | 40        |
| 28               | 0.07          | 0.00        | 0.00        | 0.07        | 0.00        | 0.00        | 49        | 38        | 72        | 39        | 83        | 63        | 79        | 66        | 72        | 51        | 59        | 35        |
| 29               | 0.12          | 0.00        | 1.02        | 0.00        | 0.00        | 0.53        | 44        | 36        | 81        | 44        | 84        | 65        | 73        | 55        | 69        | 53        | 58        | 50        |
| 30               | 0.05          | 0.00        | 0.00        | 0.00        | 0.00        | 0.62        | 47        | 36        | 91        | 54        | 85        | 70        | 77        | 49        | 71        | 48        | 59        | 45        |
| 31               |               | 0.00        |             | 0.00        | 0.00        |             |           |           | 76        | 54        |           |           | 84        | 62        | 74        | 58        |           |           |
| <b>Total/Avg</b> | <b>0.97</b>   | <b>2.75</b> | <b>3.26</b> | <b>4.77</b> | <b>3.54</b> | <b>4.22</b> | <b>51</b> | <b>35</b> | <b>64</b> | <b>41</b> | <b>78</b> | <b>57</b> | <b>82</b> | <b>63</b> | <b>77</b> | <b>59</b> | <b>71</b> | <b>54</b> |



**CLIMATIC DATA, 2019 Grand Forks, ND**

| Date             | Precipitation |             |            |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June       | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.08        | 0.00       | 0.00        | 0.00        | 0.00        | 42        | 27        | 43        | 36        | 70        | 42        | 83        | 59        | 84        | 63        | 71        | 53        |
| 2                | 0.00          | 0.03        | 0.00       | 0.00        | 0.00        | 0.53        | 38        | 30        | 56        | 35        | 71        | 41        | 88        | 60        | 85        | 65        | 64        | 45        |
| 3                | 0.00          | 0.03        | 0.00       | 0.95        | 0.00        | 0.01        | 38        | 26        | 60        | 37        | 91        | 48        | 80        | 58        | 85        | 62        | 62        | 44        |
| 4                | 0.02          | 0.00        | 0.00       | 0.00        | 0.10        | 0.00        | 40        | 26        | 50        | 38        | 94        | 65        | 77        | 59        | 86        | 62        | 72        | 39        |
| 5                | 0.02          | 0.00        | 0.01       | 0.00        | 0.23        | 0.00        | 43        | 35        | 49        | 32        | 82        | 56        | 78        | 60        | 82        | 60        | 68        | 52        |
| 6                | 0.02          | 0.00        | 0.00       | 0.00        | 0.21        | 0.00        | 47        | 34        | 44        | 28        | 85        | 60        | 76        | 52        | 85        | 56        | 73        | 49        |
| 7                | 0.07          | 0.00        | 0.08       | 0.00        | 0.00        | 0.00        | 57        | 38        | 56        | 27        | 95        | 60        | 80        | 51        | 71        | 53        | 57        | 49        |
| 8                | 0.06          | 0.00        | 1.35       | 1.13        | 0.00        | 0.00        | 51        | 36        | 55        | 41        | 81        | 54        | 86        | 62        | 75        | 48        | 68        | 48        |
| 9                | 0.00          | 0.00        | 0.00       | 0.96        | 0.00        | 1.14        | 37        | 25        | 56        | 33        | 68        | 53        | 70        | 61        | 78        | 47        | 58        | 46        |
| 10               | 0.00          | 0.00        | 0.00       | 0.42        | 0.00        | 0.01        | 37        | 26        | 62        | 29        | 71        | 50        | 77        | 60        | 81        | 54        | 62        | 53        |
| 11               | 0.00          | 0.00        | 0.00       | 0.00        | 0.21        | 0.00        | 34        | 27        | 69        | 43        | 74        | 50        | 82        | 55        | 77        | 58        | 61        | 53        |
| 12               | 0.06          | 0.00        | 0.00       | 0.00        | 0.90        | 0.63        | 32        | 27        | 65        | 39        | 68        | 44        | 80        | 62        | 62        | 57        | 54        | 50        |
| 13               | 0.00          | 0.00        | 0.00       | 0.00        | 0.62        | 0.07        | 40        | 19        | 75        | 45        | 76        | 48        | 83        | 57        | 66        | 56        | 65        | 45        |
| 14               | 0.00          | 0.00        | 0.52       | 0.01        | 0.00        | 0.00        | 42        | 22        | 75        | 48        | 81        | 56        | 86        | 65        | 76        | 55        | 70        | 41        |
| 15               | 0.01          | 0.00        | 0.26       | 0.00        | 0.20        | 0.00        | 45        | 32        | 80        | 35        | 63        | 55        | 88        | 66        | 73        | 54        | 84        | 47        |
| 16               | 0.00          | 0.00        | 0.02       | 0.00        | 0.00        | 0.00        | 63        | 32        | 60        | 42        | 63        | 53        | 83        | 60        | 82        | 53        | 88        | 62        |
| 17               | 0.28          | 0.00        | 0.00       | 0.24        | 0.20        | 0.00        | 55        | 41        | 62        | 33        | 65        | 53        | 82        | 62        | 79        | 58        | 87        | 70        |
| 18               | 0.00          | 0.00        | 0.00       | 0.07        | 0.00        | 0.00        | 56        | 38        | 59        | 46        | 74        | 50        | 84        | 64        | 73        | 48        | 79        | 63        |
| 19               | 0.00          | 0.00        | 0.04       | 0.05        | 0.00        | 0.00        | 63        | 34        | 61        | 39        | 74        | 51        | 82        | 59        | 84        | 54        | 76        | 59        |
| 20               | 0.11          | 0.00        | 0.00       | 0.00        | 0.22        | 3.59        | 62        | 42        | 70        | 34        | 71        | 52        | 80        | 56        | 75        | 54        | 89        | 63        |
| 21               | 0.00          | 0.00        | 0.02       | 0.00        | 0.00        | 0.76        | 63        | 44        | 73        | 41        | 72        | 50        | 74        | 52        | 73        | 49        | 71        | 55        |
| 22               | 0.00          | 0.52        | 0.06       | 0.00        | 0.00        | 0.00        | 63        | 37        | 60        | 46        | 69        | 58        | 79        | 48        | 76        | 48        | 68        | 50        |
| 23               | 0.00          | 0.00        | 0.00       | 0.00        | 0.00        | 0.00        | 67        | 35        | 65        | 43        | 79        | 54        | 82        | 54        | 79        | 48        | 77        | 47        |
| 24               | 0.00          | 0.99        | 0.00       | 0.00        | 0.00        | 0.05        | 71        | 44        | 60        | 43        | 78        | 59        | 83        | 54        | 83        | 58        | 72        | 52        |
| 25               | 0.00          | 0.00        | 0.00       | 0.14        | 0.77        | 0.03        | 60        | 35        | 64        | 48        | 79        | 59        | 84        | 59        | 68        | 60        | 63        | 46        |
| 26               | 0.00          | 0.00        | 0.00       | 0.00        | 0.61        | 0.01        | 55        | 32        | 58        | 44        | 87        | 57        | 79        | 59        | 70        | 56        | 62        | 44        |
| 27               | 0.00          | 0.00        | 0.00       | 0.00        | 0.08        | 0.00        | 53        | 36        | 61        | 45        | 78        | 55        | 84        | 60        | 62        | 53        | 56        | 43        |
| 28               | 0.37          | 0.00        | 0.00       | 0.18        | 0.00        | 0.00        | 47        | 33        | 76        | 39        | 81        | 54        | 81        | 60        | 72        | 48        | 56        | 43        |
| 29               | 0.43          | 0.00        | 0.14       | 0.00        | 0.02        | 2.00        | 42        | 33        | 85        | 49        | 81        | 58        | 71        | 49        | 68        | 50        | 51        | 45        |
| 30               | 0.00          | 0.00        | 0.00       | 0.00        | 0.00        | 0.25        | 45        | 35        | 93        | 54        | 88        | 66        | 75        | 54        | 71        | 44        | 51        | 42        |
| 31               |               | 0.00        |            | 0.00        | 0.00        |             |           |           | 72        | 52        |           |           | 81        | 52        | 76        | 52        |           |           |
| <b>Total/Avg</b> | <b>1.45</b>   | <b>1.65</b> | <b>2.5</b> | <b>4.15</b> | <b>4.37</b> | <b>9.08</b> | <b>50</b> | <b>33</b> | <b>64</b> | <b>40</b> | <b>77</b> | <b>54</b> | <b>81</b> | <b>58</b> | <b>76</b> | <b>54</b> | <b>68</b> | <b>50</b> |

**CLIMATIC DATA, 2019 Hettinger, ND**

| Date             | Precipitation |             |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.09        | 0.00        | 0.00        | 0.00        | 0.00        | 45        | 26        | 41        | 28        | 67        | 34        | 78        | 57        | 83        | 66        | 80        | 56        |
| 2                | 0.00          | 0.01        | 0.00        | 0.18        | 0.00        | 0.00        | 47        | 24        | 61        | 27        | 78        | 48        | 85        | 56        | 86        | 64        | 81        | 57        |
| 3                | 0.00          | 0.00        | 0.02        | 0.10        | 0.00        | 0.00        | 45        | 20        | 62        | 30        | 85        | 52        | 70        | 53        | 87        | 59        | 76        | 47        |
| 4                | 0.00          | 0.00        | 0.00        | 0.00        | 0.14        | 0.00        | 65        | 35        | 57        | 33        | 83        | 51        | 69        | 52        | 87        | 57        | 89        | 51        |
| 5                | 0.00          | 0.00        | 0.00        | 0.06        | 0.04        | 0.00        | 67        | 32        | 45        | 33        | 80        | 47        | 69        | 57        | 83        | 56        | 87        | 55        |
| 6                | 0.01          | 0.00        | 0.00        | 0.07        | 0.00        | 0.07        | 55        | 36        | 46        | 30        | 84        | 44        | 74        | 54        | 91        | 53        | 82        | 46        |
| 7                | 0.02          | 0.05        | 0.45        | 0.00        | 0.00        | 1.07        | 66        | 35        | 40        | 23        | 84        | 56        | 83        | 60        | 79        | 53        | 61        | 45        |
| 8                | 0.01          | 0.18        | 0.00        | 0.00        | 0.00        | 0.07        | 64        | 35        | 49        | 32        | 57        | 45        | 83        | 63        | 83        | 48        | 54        | 45        |
| 9                | 0.07          | 0.00        | 0.00        | 0.41        | 0.00        | 0.37        | 47        | 31        | 51        | 28        | 67        | 40        | 72        | 58        | 80        | 62        | 66        | 50        |
| 10               | 0.00          | 0.00        | 0.00        | 0.00        | 0.05        | 0.06        | 33        | 20        | 63        | 29        | 72        | 40        | 77        | 57        | 87        | 61        | 72        | 45        |
| 11               | 0.00          | 0.21        | 0.17        | 0.00        | 2.01        | 0.42        | 32        | 22        | 51        | 34        | 71        | 39        | 87        | 60        | 81        | 61        | 60        | 54        |
| 12               | 0.01          | 0.00        | 0.01        | 0.00        | 0.42        | 0.54        | 42        | 23        | 65        | 30        | 72        | 42        | 86        | 62        | 77        | 54        | 57        | 45        |
| 13               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 49        | 17        | 79        | 45        | 82        | 50        | 88        | 61        | 64        | 48        | 76        | 44        |
| 14               | 0.00          | 0.00        | 0.21        | 0.16        | 0.00        | 0.00        | 50        | 27        | 76        | 42        | 85        | 50        | 88        | 62        | 76        | 43        | 79        | 51        |
| 15               | 0.00          | 0.00        | 0.01        | 0.02        | 0.03        | 0.00        | 60        | 32        | 85        | 50        | 77        | 52        | 84        | 62        | 75        | 52        | 87        | 50        |
| 16               | 0.21          | 0.07        | 0.00        | 0.16        | 0.00        | 0.00        | 60        | 24        | 58        | 44        | 75        | 47        | 83        | 60        | 82        | 50        | 88        | 49        |
| 17               | 0.04          | 0.74        | 0.03        | 0.01        | 0.03        | 0.00        | 57        | 37        | 47        | 38        | 70        | 46        | 85        | 59        | 62        | 46        | 87        | 51        |
| 18               | 0.00          | 1.08        | 0.06        | 0.00        | 0.00        | 0.00        | 59        | 32        | 38        | 32        | 73        | 48        | 86        | 59        | 73        | 41        | 74        | 47        |
| 19               | 0.00          | 0.20        | 0.05        | 0.62        | 0.00        | 0.00        | 77        | 36        | 49        | 32        | 66        | 55        | 78        | 59        | 86        | 51        | 81        | 47        |
| 20               | 0.00          | 0.06        | 0.43        | 0.00        | 0.00        | 0.23        | 75        | 43        | 49        | 30        | 69        | 50        | 79        | 58        | 76        | 52        | 71        | 58        |
| 21               | 0.28          | 0.04        | 0.12        | 0.29        | 0.07        | 0.27        | 54        | 38        | 52        | 39        | 64        | 45        | 73        | 56        | 77        | 52        | 63        | 44        |
| 22               | 0.00          | 0.70        | 0.00        | 0.00        | 0.00        | 0.00        | 64        | 35        | 47        | 37        | 72        | 43        | 79        | 49        | 79        | 56        | 68        | 39        |
| 23               | 0.00          | 0.01        | 0.17        | 0.00        | 0.02        | 0.00        | 72        | 39        | 58        | 38        | 74        | 45        | 83        | 56        | 75        | 64        | 77        | 37        |
| 24               | 0.00          | 0.60        | 0.00        | 0.00        | 0.20        | 0.00        | 71        | 39        | 53        | 44        | 75        | 44        | 80        | 59        | 82        | 61        | 70        | 43        |
| 25               | 0.00          | 0.00        | 0.02        | 0.00        | 0.00        | 0.00        | 57        | 26        | 68        | 36        | 77        | 43        | 83        | 58        | 83        | 58        | 63        | 40        |
| 26               | 0.10          | 0.00        | 0.01        | 0.00        | 0.01        | 0.00        | 51        | 20        | 69        | 46        | 82        | 51        | 84        | 51        | 70        | 47        | 74        | 37        |
| 27               | 0.34          | 0.00        | 2.12        | 0.02        | 0.00        | 0.00        | 40        | 31        | 58        | 44        | 80        | 59        | 85        | 48        | 68        | 45        | 59        | 33        |
| 28               | 0.22          | 0.00        | 0.02        | 0.02        | 0.00        | 0.31        | 48        | 32        | 62        | 41        | 82        | 60        | 82        | 53        | 82        | 37        | 46        | 28        |
| 29               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.40        | 37        | 25        | 75        | 37        | 87        | 69        | 77        | 46        | 71        | 48        | 52        | 42        |
| 30               | 0.00          | 0.00        | 0.01        | 0.00        | 0.00        | 0.32        | 36        | 24        | 79        | 49        | 71        | 58        | 80        | 56        | 65        | 42        | 48        | 35        |
| 31               |               | 0.00        |             | 0.00        | 0.00        |             |           |           | 74        | 39        |           |           | 87        | 63        | 67        | 52        |           |           |
| <b>Total/Avg</b> | <b>1.31</b>   | <b>4.04</b> | <b>3.91</b> | <b>2.12</b> | <b>3.02</b> | <b>4.13</b> | <b>54</b> | <b>30</b> | <b>58</b> | <b>36</b> | <b>75</b> | <b>48</b> | <b>81</b> | <b>57</b> | <b>78</b> | <b>53</b> | <b>71</b> | <b>46</b> |

**CLIMATIC DATA, 2019 Hillsboro, ND**

| Date             | Precipitation |             |             |             |            |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August     | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.16        | 0.00        | 0.00        | 0.00       | 0.00        | 41        | 28        | 44        | 37        | 73        | 45        | 84        | 62        | 84        | 62        | 72        | 53        |
| 2                | 0.01          | 0.05        | 0.00        | 0.00        | 0.26       | 0.40        | 37        | 27        | 56        | 32        | 74        | 43        | 88        | 59        | 84        | 66        | 70        | 47        |
| 3                | 0.00          | 0.08        | 0.00        | 0.04        | 0.00       | 0.00        | 36        | 22        | 64        | 39        | 91        | 51        | 85        | 60        | 84        | 61        | 64        | 47        |
| 4                | 0.01          | 0.01        | 0.00        | 0.00        | 0.00       | 0.00        | 39        | 26        | 50        | 36        | 96        | 65        | 80        | 60        | 84        | 63        | 70        | 41        |
| 5                | 0.02          | 0.00        | 0.03        | 0.00        | 0.14       | 0.00        | 42        | 35        | 51        | 32        | 85        | 59        | 79        | 60        | 81        | 60        | 70        | 51        |
| 6                | 0.01          | 0.00        | 0.00        | 0.00        | 0.00       | 0.00        | 49        | 35        | 47        | 28        | 89        | 59        | 78        | 53        | 86        | 56        | 73        | 50        |
| 7                | 0.02          | 0.00        | 0.00        | 0.00        | 0.00       | 0.00        | 60        | 38        | 58        | 23        | 96        | 62        | 82        | 51        | 72        | 49        | 56        | 50        |
| 8                | 0.07          | 0.00        | 0.53        | 1.99        | 0.00       | 0.00        | 55        | 40        | 52        | 43        | 90        | 55        | 88        | 65        | 74        | 46        | 67        | 48        |
| 9                | 0.00          | 0.00        | 0.00        | 1.29        | 0.00       | 1.26        | 42        | 26        | 58        | 34        | 71        | 50        | 72        | 62        | 76        | 48        | 59        | 53        |
| 10               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00       | 0.01        | 37        | 27        | 63        | 26        | 73        | 45        | 77        | 60        | 80        | 54        | 63        | 55        |
| 11               | 0.00          | 0.02        | 0.17        | 0.00        | 0.00       | 0.00        | 34        | 26        | 70        | 44        | 79        | 48        | 82        | 55        | 77        | 61        | 62        | 55        |
| 12               | 0.06          | 0.00        | 0.00        | 0.06        | 0.92       | 0.85        | 30        | 26        | 65        | 40        | 69        | 44        | 82        | 66        | 63        | 58        | 56        | 49        |
| 13               | 0.00          | 0.00        | 0.02        | 0.00        | 0.02       | 0.10        | 39        | 17        | 74        | 43        | 77        | 43        | 84        | 64        | 65        | 58        | 65        | 47        |
| 14               | 0.00          | 0.00        | 0.37        | 0.00        | 0.01       | 0.00        | 42        | 21        | 76        | 47        | 82        | 57        | 88        | 66        | 76        | 57        | 67        | 44        |
| 15               | 0.00          | 0.20        | 0.47        | 0.00        | 0.09       | 0.00        | 44        | 32        | 81        | 36        | 66        | 55        | 89        | 65        | 73        | 52        | 82        | 52        |
| 16               | 0.00          | 0.00        | 0.01        | 0.00        | 0.00       | 0.00        | 65        | 32        | 60        | 41        | 65        | 53        | 84        | 62        | 82        | 53        | 87        | 65        |
| 17               | 0.42          | 0.00        | 0.00        | 0.22        | 0.24       | 0.00        | 52        | 42        | 61        | 34        | 62        | 53        | 84        | 66        | 80        | 57        | 87        | 70        |
| 18               | 0.00          | 0.31        | 0.00        | 0.71        | 0.00       | 0.00        | 55        | 35        | 52        | 44        | 74        | 49        | 85        | 65        | 73        | 48        | 77        | 60        |
| 19               | 0.00          | 0.02        | 0.00        | 0.07        | 0.00       | 0.00        | 63        | 33        | 58        | 37        | 73        | 48        | 83        | 60        | 84        | 54        | 77        | 54        |
| 20               | 0.04          | 0.00        | 0.01        | 0.00        | 1.39       | 2.12        | 63        | 46        | 67        | 31        | 71        | 53        | 80        | 59        | 73        | 52        | 87        | 63        |
| 21               | 0.08          | 0.00        | 0.22        | 0.00        | 0.00       | 1.62        | 62        | 44        | 70        | 39        | 74        | 56        | 75        | 54        | 72        | 47        | 74        | 54        |
| 22               | 0.00          | 0.56        | 0.21        | 0.00        | 0.00       | 0.00        | 64        | 37        | 57        | 46        | 65        | 56        | 79        | 48        | 75        | 48        | 68        | 50        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00       | 0.00        | 69        | 32        | 61        | 46        | 80        | 54        | 83        | 56        | 76        | 49        | 76        | 47        |
| 24               | 0.00          | 0.35        | 0.09        | 0.00        | 0.00       | 0.03        | 73        | 42        | 63        | 51        | 78        | 60        | 84        | 60        | 80        | 59        | 75        | 53        |
| 25               | 0.00          | 0.00        | 0.00        | 0.00        | 0.98       | 0.00        | 65        | 29        | 63        | 47        | 81        | 56        | 85        | 59        | 68        | 60        | 66        | 44        |
| 26               | 0.00          | 0.02        | 0.00        | 0.00        | 0.15       | 0.00        | 56        | 27        | 65        | 42        | 87        | 55        | 82        | 59        | 72        | 55        | 60        | 43        |
| 27               | 0.00          | 0.00        | 0.09        | 0.00        | 0.00       | 0.00        | 56        | 37        | 62        | 46        | 79        | 61        | 84        | 59        | 64        | 53        | 57        | 36        |
| 28               | 0.35          | 0.00        | 0.00        | 0.07        | 0.00       | 0.00        | 49        | 34        | 74        | 38        | 83        | 58        | 80        | 61        | 72        | 49        | 58        | 34        |
| 29               | 0.13          | 0.00        | 0.36        | 0.00        | 0.00       | 0.47        | 43        | 34        | 85        | 44        | 82        | 64        | 72        | 49        | 68        | 47        | 54        | 48        |
| 30               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00       | 0.83        | 46        | 35        | 95        | 53        | 85        | 66        | 76        | 44        | 71        | 42        | 53        | 42        |
| 31               |               | 0.00        |             | 0.00        | 0.00       |             |           |           | 76        | 53        |           |           | 83        | 57        | 75        | 53        |           |           |
| <b>Total/Avg</b> | <b>1.22</b>   | <b>1.78</b> | <b>2.58</b> | <b>4.45</b> | <b>4.2</b> | <b>7.69</b> | <b>50</b> | <b>32</b> | <b>64</b> | <b>40</b> | <b>78</b> | <b>54</b> | <b>82</b> | <b>59</b> | <b>76</b> | <b>54</b> | <b>68</b> | <b>50</b> |

**CLIMATIC DATA, 2019 Inkster, ND**

| Date             | Precipitation |             |             |             |            |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August     | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.19        | 0.00        | 0.00        | 0.00       | 0.00        | 41        | 28        | 42        | 34        | 72        | 39        | 82        | 56        | 86        | 66        | 70        | 54        |
| 2                | 0.00          | 0.01        | 0.00        | 0.00        | 0.00       | 0.49        | 37        | 26        | 57        | 32        | 70        | 39        | 83        | 63        | 87        | 65        | 59        | 47        |
| 3                | 0.00          | 0.00        | 0.00        | 0.01        | 0.00       | 0.00        | 37        | 24        | 62        | 39        | 90        | 47        | 79        | 59        | 86        | 59        | 62        | 46        |
| 4                | 0.05          | 0.00        | 0.00        | 0.00        | 0.00       | 0.00        | 39        | 27        | 52        | 38        | 94        | 62        | 78        | 56        | 90        | 63        | 72        | 43        |
| 5                | 0.00          | 0.00        | 0.02        | 0.00        | 0.08       | 0.00        | 39        | 32        | 52        | 27        | 84        | 51        | 78        | 57        | 83        | 60        | 72        | 52        |
| 6                | 0.01          | 0.00        | 0.00        | 0.00        | 0.29       | 0.00        | 43        | 30        | 45        | 25        | 84        | 59        | 76        | 49        | 88        | 57        | 74        | 50        |
| 7                | 0.17          | 0.00        | 0.04        | 0.00        | 0.01       | 0.00        | 59        | 37        | 57        | 22        | 97        | 59        | 81        | 51        | 71        | 52        | 55        | 48        |
| 8                | 0.07          | 0.00        | 0.66        | 0.73        | 0.00       | 0.00        | 52        | 34        | 58        | 33        | 77        | 52        | 87        | 65        | 75        | 48        | 63        | 42        |
| 9                | 0.00          | 0.00        | 0.00        | 0.23        | 0.00       | 0.96        | 35        | 23        | 56        | 31        | 69        | 50        | 68        | 64        | 79        | 45        | 57        | 41        |
| 10               | 0.00          | 0.00        | 0.00        | 0.05        | 0.99       | 0.02        | 35        | 23        | 65        | 27        | 71        | 49        | 78        | 59        | 81        | 50        | 60        | 51        |
| 11               | 0.00          | 0.01        | 0.00        | 0.00        | 0.02       | 0.00        | 36        | 26        | 68        | 43        | 74        | 48        | 83        | 57        | 75        | 60        | 59        | 52        |
| 12               | 0.00          | 0.00        | 0.00        | 0.00        | 0.48       | 0.63        | 33        | 26        | 64        | 43        | 67        | 45        | 80        | 62        | 63        | 56        | 52        | 48        |
| 13               | 0.08          | 0.00        | 0.01        | 0.00        | 0.13       | 0.13        | 42        | 19        | 77        | 44        | 78        | 50        | 83        | 57        | 65        | 52        | 65        | 47        |
| 14               | 0.00          | 0.00        | 0.00        | 0.06        | 0.00       | 0.00        | 41        | 21        | 72        | 46        | 82        | 58        | 86        | 65        | 77        | 51        | 71        | 43        |
| 15               | 0.00          | 0.12        | 0.32        | 0.01        | 0.02       | 0.00        | 58        | 32        | 80        | 33        | 65        | 53        | 87        | 64        | 74        | 59        | 82        | 53        |
| 16               | 0.00          | 0.00        | 0.10        | 0.00        | 0.00       | 0.00        | 63        | 35        | 58        | 39        | 58        | 52        | 83        | 61        | 82        | 54        | 87        | 55        |
| 17               | 0.09          | 0.00        | 0.14        | 0.08        | 0.00       | 0.00        | 55        | 40        | 59        | 31        | 64        | 52        | 82        | 61        | 75        | 53        | 85        | 67        |
| 18               | 0.00          | 0.00        | 0.01        | 0.00        | 0.00       | 0.00        | 59        | 35        | 56        | 43        | 74        | 49        | 85        | 64        | 74        | 47        | 77        | 62        |
| 19               | 0.00          | 0.00        | 0.00        | 0.05        | 0.00       | 0.00        | 67        | 35        | 61        | 39        | 76        | 51        | 81        | 56        | 82        | 56        | 74        | 56        |
| 20               | 0.07          | 0.00        | 0.00        | 0.00        | 0.00       | 0.85        | 64        | 42        | 69        | 35        | 72        | 53        | 79        | 56        | 74        | 52        | 87        | 55        |
| 21               | 0.00          | 0.00        | 0.76        | 0.00        | 0.00       | 0.45        | 65        | 41        | 72        | 35        | 72        | 50        | 75        | 51        | 74        | 48        | 71        | 53        |
| 22               | 0.00          | 0.46        | 0.03        | 0.00        | 0.00       | 0.00        | 64        | 34        | 58        | 45        | 72        | 58        | 81        | 50        | 73        | 45        | 68        | 47        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00       | 0.00        | 68        | 33        | 68        | 44        | 77        | 55        | 83        | 54        | 74        | 45        | 76        | 48        |
| 24               | 0.00          | 0.77        | 0.02        | 0.00        | 0.00       | 0.02        | 72        | 45        | 57        | 43        | 80        | 57        | 84        | 58        | 79        | 59        | 73        | 51        |
| 25               | 0.00          | 0.00        | 0.58        | 0.19        | 0.16       | 0.00        | 60        | 33        | 66        | 46        | 77        | 58        | 85        | 62        | 68        | 61        | 63        | 43        |
| 26               | 0.00          | 0.00        | 0.00        | 0.00        | 0.67       | 0.24        | 58        | 29        | 58        | 43        | 83        | 56        | 78        | 62        | 71        | 57        | 61        | 44        |
| 27               | 0.00          | 0.00        | 0.00        | 0.00        | 0.03       | 0.01        | 54        | 34        | 65        | 43        | 81        | 57        | 86        | 59        | 62        | 53        | 54        | 41        |
| 28               | 0.44          | 0.00        | 0.00        | 0.32        | 0.02       | 0.00        | 45        | 30        | 78        | 43        | 83        | 55        | 83        | 63        | 73        | 49        | 54        | 38        |
| 29               | 0.56          | 0.00        | 0.68        | 0.00        | 0.00       | 1.53        | 38        | 32        | 87        | 50        | 82        | 57        | 72        | 48        | 68        | 51        | 48        | 42        |
| 30               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00       | 0.61        | 43        | 28        | 94        | 59        | 85        | 64        | 75        | 42        | 72        | 44        | 47        | 39        |
| 31               |               | 0.00        |             | 0.00        | 0.00       |             |           |           | 72        | 47        |           |           | 83        | 52        | 74        | 51        |           |           |
| <b>Total/Avg</b> | <b>1.54</b>   | <b>1.56</b> | <b>3.37</b> | <b>1.73</b> | <b>2.9</b> | <b>5.94</b> | <b>50</b> | <b>31</b> | <b>64</b> | <b>39</b> | <b>77</b> | <b>53</b> | <b>81</b> | <b>58</b> | <b>76</b> | <b>54</b> | <b>67</b> | <b>49</b> |

**CLIMATIC DATA, 2019 Langdon, ND**

| Date             | Precipitation |            |             |            |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|------------|-------------|------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May        | June        | July       | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.00       | 0.00        | 0.00       | 0.01        | 0.00        | 40        | 26        | 42        | 32        | 69        | 36        | 79        | 54        | 84        | 59        | 69        | 51        |
| 2                | 0.00          | 0.00       | 0.00        | 0.00       | 0.00        | 0.49        | 35        | 23        | 55        | 30        | 68        | 40        | 73        | 58        | 83        | 62        | 57        | 43        |
| 3                | 0.00          | 0.11       | 0.00        | 0.15       | 0.00        | 0.00        | 33        | 20        | 58        | 41        | 89        | 49        | 69        | 55        | 82        | 60        | 58        | 40        |
| 4                | 0.00          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 36        | 25        | 52        | 36        | 90        | 57        | 74        | 51        | 84        | 65        | 71        | 40        |
| 5                | 0.00          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 37        | 27        | 46        | 27        | 84        | 47        | 74        | 54        | 79        | 60        | 71        | 51        |
| 6                | 0.01          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 39        | 27        | 44        | 23        | 81        | 50        | 73        | 48        | 85        | 53        | 70        | 50        |
| 7                | 0.10          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 57        | 36        | 55        | 23        | 95        | 65        | 80        | 52        | 69        | 52        | 54        | 45        |
| 8                | 0.00          | 0.00       | 0.44        | 0.97       | 0.00        | 0.00        | 49        | 29        | 52        | 32        | 72        | 49        | 85        | 63        | 72        | 45        | 63        | 37        |
| 9                | 0.00          | 0.00       | 0.01        | 0.08       | 0.00        | 0.99        | 29        | 19        | 51        | 28        | 66        | 46        | 69        | 61        | 78        | 43        | 54        | 42        |
| 10               | 0.00          | 0.00       | 0.00        | 0.16       | 0.05        | 0.03        | 34        | 21        | 64        | 26        | 68        | 43        | 74        | 59        | 76        | 53        | 56        | 50        |
| 11               | 0.00          | 0.24       | 0.00        | 0.00       | 0.00        | 0.01        | 34        | 23        | 66        | 42        | 64        | 44        | 81        | 56        | 72        | 56        | 56        | 49        |
| 12               | 0.01          | 0.27       | 0.00        | 0.00       | 0.23        | 0.41        | 32        | 25        | 61        | 43        | 68        | 42        | 75        | 59        | 60        | 52        | 49        | 46        |
| 13               | 0.00          | 0.00       | 0.00        | 0.00       | 0.58        | 0.08        | 45        | 19        | 75        | 44        | 77        | 48        | 82        | 56        | 69        | 53        | 63        | 44        |
| 14               | 0.00          | 0.00       | 0.00        | 0.57       | 0.00        | 0.00        | 42        | 27        | 66        | 43        | 80        | 57        | 84        | 64        | 73        | 49        | 72        | 39        |
| 15               | 0.02          | 0.04       | 0.65        | 0.00       | 0.00        | 0.00        | 56        | 30        | 76        | 39        | 63        | 50        | 80        | 65        | 74        | 54        | 83        | 47        |
| 16               | 0.00          | 0.00       | 0.12        | 0.00       | 0.00        | 0.00        | 58        | 32        | 54        | 34        | 53        | 50        | 77        | 58        | 81        | 48        | 86        | 58        |
| 17               | 0.06          | 0.00       | 0.11        | 0.00       | 0.01        | 0.00        | 52        | 37        | 58        | 28        | 63        | 50        | 78        | 62        | 67        | 48        | 82        | 67        |
| 18               | 0.01          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 56        | 34        | 52        | 36        | 68        | 50        | 81        | 61        | 72        | 42        | 74        | 57        |
| 19               | 0.00          | 0.00       | 0.00        | 0.00       | 0.12        | 0.00        | 65        | 34        | 57        | 35        | 73        | 48        | 77        | 58        | 81        | 52        | 73        | 47        |
| 20               | 0.00          | 0.00       | 0.00        | 0.00       | 0.31        | 1.68        | 60        | 42        | 66        | 34        | 70        | 53        | 74        | 56        | 70        | 52        | 75        | 59        |
| 21               | 0.00          | 0.00       | 0.88        | 0.00       | 0.00        | 0.59        | 62        | 39        | 70        | 34        | 68        | 51        | 70        | 50        | 70        | 45        | 66        | 50        |
| 22               | 0.00          | 0.21       | 0.01        | 0.00       | 0.00        | 0.00        | 60        | 35        | 58        | 44        | 69        | 52        | 76        | 49        | 71        | 44        | 65        | 46        |
| 23               | 0.00          | 0.00       | 0.00        | 0.00       | 0.00        | 0.00        | 65        | 34        | 67        | 41        | 73        | 51        | 80        | 51        | 74        | 54        | 74        | 45        |
| 24               | 0.00          | 0.41       | 0.02        | 0.00       | 0.00        | 0.01        | 67        | 42        | 52        | 43        | 76        | 52        | 83        | 56        | 80        | 62        | 69        | 49        |
| 25               | 0.00          | 0.00       | 0.04        | 0.00       | 0.94        | 0.00        | 55        | 33        | 65        | 44        | 74        | 55        | 81        | 59        | 66        | 60        | 57        | 40        |
| 26               | 0.00          | 0.12       | 0.00        | 0.00       | 0.14        | 0.32        | 54        | 29        | 48        | 40        | 81        | 51        | 74        | 56        | 70        | 54        | 54        | 39        |
| 27               | 0.00          | 0.00       | 0.00        | 0.00       | 0.08        | 0.00        | 50        | 29        | 62        | 35        | 81        | 60        | 82        | 58        | 57        | 51        | 49        | 37        |
| 28               | 0.13          | 0.00       | 0.00        | 0.00       | 0.01        | 0.00        | 42        | 30        | 76        | 37        | 81        | 58        | 78        | 60        | 71        | 46        | 51        | 33        |
| 29               | 0.06          | 0.00       | 0.27        | 0.00       | 0.00        | 0.79        | 35        | 29        | 82        | 50        | 79        | 61        | 69        | 47        | 66        | 47        | 42        | 38        |
| 30               | 0.00          | 0.00       | 0.00        | 0.00       | 0.00        | 0.46        | 42        | 25        | 90        | 56        | 82        | 63        | 75        | 40        | 69        | 42        | 43        | 35        |
| 31               |               | 0.00       |             | 0.77       | 0.00        |             |           |           | 70        | 45        |           |           | 84        | 57        | 73        | 49        |           |           |
| <b>Total/Avg</b> | <b>0.4</b>    | <b>1.4</b> | <b>2.55</b> | <b>2.7</b> | <b>2.48</b> | <b>5.86</b> | <b>47</b> | <b>29</b> | <b>61</b> | <b>37</b> | <b>74</b> | <b>51</b> | <b>77</b> | <b>56</b> | <b>73</b> | <b>52</b> | <b>64</b> | <b>46</b> |

**CLIMATIC DATA, 2019 Minot, ND**

| Date             | Precipitation |             |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.00        | 0.00        | 0.01        | 0.13        | 0.00        | 46        | 26        | 46        | 27        | 74        | 38        | 81        | 54        | 87        | 57        | 73        | 54        |
| 2                | 0.00          | 0.00        | 0.00        | 0.02        | 0.04        | 1.13        | 41        | 27        | 61        | 28        | 77        | 44        | 70        | 59        | 86        | 64        | 63        | 50        |
| 3                | 0.00          | 0.00        | 0.02        | 0.02        | 0.00        | 0.00        | 44        | 16        | 64        | 35        | 91        | 57        | 66        | 56        | 87        | 61        | 66        | 46        |
| 4                | 0.00          | 0.00        | 0.00        | 0.00        | 0.44        | 0.00        | 59        | 32        | 51        | 34        | 80        | 50        | 72        | 48        | 85        | 60        | 78        | 43        |
| 5                | 0.00          | 0.00        | 0.00        | 0.00        | 0.14        | 0.00        | 41        | 32        | 49        | 25        | 87        | 50E       | 77        | 51        | 79        | 58        | 75        | 55        |
| 6                | 0.01          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 42        | 32        | 53        | 28        | 84        | 64        | 76        | 54        | 87        | 58        | 71        | 46        |
| 7                | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.41        | 63        | 36        | 57        | 27        | 87        | 64        | 84        | 57        | 70        | 48        | 57        | 47        |
| 8                | 0.06          | 0.00        | 0.03        | 0.00        | 0.00        | 0.00        | 60        | 37        | 56        | 35        | 68        | 45        | 86        | 62        | 75        | 43        | 62        | 41        |
| 9                | 0.00          | 0.00        | 0.01        | 1.00        | 0.00        | 0.72        | 40        | 23        | 53        | 23        | 67        | 45        | 71        | 61        | 81        | 50        | 56        | 52        |
| 10               | 0.00          | 0.00        | 0.00        | 0.15        | 0.17        | 0.02        | 30        | 20        | 69        | 32        | 76        | 39        | 76        | 59        | 78        | 55        | 64        | 53        |
| 11               | 0.00          | 0.11        | 0.00        | 0.00        | 0.05        | 0.18        | 40        | 22        | 63        | 43        | 70        | 47        | 86        | 58        | 71        | 60        | 55        | 50        |
| 12               | 0.00          | 0.00        | 0.01        | 0.17        | 0.24        | 1.92        | 45        | 28        | 67        | 33        | 74        | 39        | 78        | 60        | 70        | 58        | 52        | 46        |
| 13               | 0.00          | 0.00        | 0.08        | 0.00        | 0.52        | 0.03        | 55        | 18        | 77        | 51        | 86        | 55        | 86        | 57        | 68        | 54        | 65        | 47        |
| 14               | 0.00          | 0.00        | 0.34        | 0.00        | 0.00        | 0.00        | 51        | 27        | 75        | 52        | 83        | 59        | 88        | 69        | 76        | 54        | 76        | 47        |
| 15               | 0.00          | 0.00        | 0.04        | 0.00        | 0.12        | 0.00        | 62        | 31        | 81        | 49        | 70        | 53        | 82        | 61        | 77        | 55        | 86        | 49        |
| 16               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 62        | 29        | 61        | 43        | 60        | 46        | 78        | 56        | 84        | 53        | 87        | 48        |
| 17               | 0.11          | 0.00        | 0.00        | 0.08        | 0.05        | 0.00        | 48        | 36        | 53        | 38        | 66        | 44        | 82        | 62        | 65        | 45        | 86        | 63        |
| 18               | 0.01          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 57        | 33        | 52        | 39        | 72        | 44        | 81        | 59        | 74        | 46        | 77        | 53        |
| 19               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 78        | 32        | 57        | 37        | 73        | 52        | 75        | 60        | 86        | 50        | 77        | 46        |
| 20               | 0.04          | 0.00        | 0.39        | 0.00        | 0.00        | 0.08        | 66        | 44        | 65        | 27        | 70        | 54        | 76        | 53        | 73        | 48        | 72        | 60        |
| 21               | 0.00          | 0.00        | 0.17        | 0.31        | 0.00        | 1.62        | 64        | 40        | 68        | 36        | 64        | 52        | 75        | 49        | 77        | 41        | 62        | 48        |
| 22               | 0.00          | 0.04        | 0.00        | 0.00        | 0.00        | 0.00        | 63        | 30        | 57        | 43        | 72        | 50        | 81        | 54        | 79        | 45        | 68        | 42        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.72        | 0.00        | 73        | 41        | 70        | 40        | 75        | 53        | 82        | 55        | 74        | 57        | 79        | 47        |
| 24               | 0.00          | 0.59        | 0.22        | 0.00        | 0.00        | 0.00        | 68        | 37        | 53        | 42        | 74        | 49        | 84        | 63        | 78        | 66        | 70        | 49        |
| 25               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 56        | 28        | 70        | 42        | 76        | 53        | 80        | 58        | 77        | 59        | 60        | 41        |
| 26               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.04        | 58        | 23        | 55        | 38        | 83        | 48        | 79        | 52        | 74        | 53        | 55        | 43        |
| 27               | 0.01          | 0.00        | 0.00        | 0.00        | 0.23        | 0.00        | 50        | 33        | 64        | 38        | 84        | 59        | 89        | 50        | 63        | 50        | 48        | 39        |
| 28               | 0.37          | 0.00        | 0.12        | 0.00        | 0.00        | 0.32        | 38        | 31        | 73        | 33        | 82        | 61        | 79        | 60        | 78        | 44        | 53        | 40        |
| 29               | 0.32          | 0.00        | 1.71        | 0.00        | 0.00        | 1.21        | 36        | 26        | 86        | 51        | 81        | 60        | 73        | 46        | 68        | 45        | 42        | 38        |
| 30               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.41        | 43        | 26        | 88        | 53        | 80        | 57        | 80        | 43        | 69        | 40        | 43        | 38        |
| 31               |               | 0.00        |             | 0.00        | 0.00        |             |           |           | 66        | 40        |           |           | 90        | 58        | 72        | 46        |           |           |
| <b>Total/Avg</b> | <b>0.93</b>   | <b>0.74</b> | <b>3.14</b> | <b>1.76</b> | <b>2.85</b> | <b>8.09</b> | <b>53</b> | <b>30</b> | <b>63</b> | <b>37</b> | <b>76</b> | <b>52</b> | <b>79</b> | <b>56</b> | <b>76</b> | <b>52</b> | <b>66</b> | <b>47</b> |

**CLIMATIC DATA, 2019 Oakes, ND**

| Date             | Precipitation |             |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.18        | 0.00        | 0.00        | 0.00        | 0.00        | 39        | 24        | 44        | 36        | 72        | 47        | 80        | 63        | 81        | 63        | 72        | 57        |
| 2                | 0.00          | 0.00        | 0.00        | 0.00        | 2.53        | 0.40        | 40        | 29        | 57        | 29        | 75        | 49        | 85        | 59        | 79        | 64        | 74        | 56        |
| 3                | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.01        | 39        | 24        | 66        | 39        | 87        | 56        | 87        | 65        | 82        | 64        | 68        | 47        |
| 4                | 0.00          | 0.00        | 0.76        | 0.36        | 0.00        | 0.00        | 40        | 29        | 60        | 35        | 90        | 63        | 76        | 62        | 82        | 63        | 75        | 42        |
| 5                | 0.00          | 0.00        | 0.00        | 0.08        | 0.00        | 0.00        | 54        | 34        | 57        | 35        | 82        | 58        | 70        | 59        | 79        | 62        | 78        | 55        |
| 6                | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 54        | 37        | 52        | 35        | 87        | 58        | 77        | 59        | 85        | 59        | 74        | 50        |
| 7                | 0.00          | 0.01        | 0.00        | 0.00        | 0.00        | 1.16        | 64        | 41        | 57        | 27        | 93        | 64        | 82        | 56        | 75        | 53        | 59        | 49        |
| 8                | 0.02          | 0.29        | 0.15        | 0.48        | 0.00        | 0.07        | 65        | 36        | 46        | 43        | 86        | 54        | 89        | 65        | 75        | 48        | 60        | 50        |
| 9                | 0.00          | 0.00        | 0.00        | 0.43        | 0.00        | 1.47        | 38        | 27        | 55        | 33        | 71        | 51        | 80        | 65        | 73        | 55        | 67        | 56        |
| 10               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 33        | 25        | 64        | 29        | 78        | 48        | 79        | 62        | 68        | 63        | 71        | 53        |
| 11               | 0.00          | 0.00        | 0.05        | 0.00        | 0.00        | 0.30        | 29        | 24        | 60        | 45        | 74        | 54        | 84        | 59        | 75        | 58        | 65        | 52        |
| 12               | 0.09          | 0.00        | 0.00        | 0.00        | 0.05        | 0.99        | 31        | 24        | 64        | 37        | 68        | 44        | 85        | 65        | 75        | 61        | 57        | 50        |
| 13               | 0.00          | 0.00        | 0.00        | 0.00        | 0.03        | 0.00        | 43        | 23        | 73        | 44        | 80        | 50        | 85        | 68        | 69        | 60        | 62        | 49        |
| 14               | 0.00          | 0.00        | 0.24        | 0.00        | 0.00        | 0.00        | 41        | 19        | 78        | 46        | 88        | 57        | 88        | 66        | 75        | 57        | 72        | 46        |
| 15               | 0.00          | 0.22        | 0.71        | 0.00        | 1.98        | 0.00        | 50        | 29        | 84        | 49        | 73        | 58        | 89        | 70        | 74        | 54        | 84        | 52        |
| 16               | 0.00          | 0.00        | 0.00        | 0.00        | 0.01        | 0.00        | 64        | 29        | 61        | 44        | 72        | 54        | 84        | 66        | 79        | 54        | 86        | 66        |
| 17               | 0.30          | 0.52        | 0.00        | 0.02        | 0.31        | 0.00        | 50        | 41        | 59        | 42        | 71        | 49        | 86        | 67        | 82        | 58        | 86        | 70        |
| 18               | 0.01          | 1.10        | 0.00        | 0.16        | 0.00        | 0.01        | 57        | 36        | 48        | 41        | 74        | 49        | 88        | 62        | 71        | 50        | 80        | 56        |
| 19               | 0.00          | 0.14        | 0.05        | 0.05        | 0.00        | 0.00        | 65        | 30        | 48        | 39        | 64        | 57        | 84        | 64        | 82        | 54        | 81        | 51        |
| 20               | 0.00          | 0.00        | 0.74        | 0.19        | 0.00        | 0.01        | 81        | 44        | 60        | 35        | 67        | 58        | 80        | 60        | 76        | 55        | 87        | 67        |
| 21               | 0.00          | 0.22        | 1.91        | 0.00        | 0.00        | 0.09        | 61        | 46        | 61        | 46        | 68        | 58        | 75        | 54        | 74        | 52        | 79        | 53        |
| 22               | 0.00          | 0.26        | 0.01        | 0.00        | 0.00        | 0.00        | 68        | 41        | 53        | 44        | 69        | 54        | 77        | 54        | 76        | 48        | 70        | 48        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 72        | 34        | 56        | 44        | 76        | 52        | 81        | 57        | 76        | 55        | 77        | 45        |
| 24               | 0.00          | 0.40        | 0.26        | 0.00        | 0.00        | 0.00        | 77        | 47        | 70        | 47        | 80        | 57        | 82        | 55        | 79        | 62        | 75        | 52        |
| 25               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 67        | 37        | 64        | 47        | 78        | 56        | 87        | 66        | 72        | 62        | 64        | 45        |
| 26               | 0.00          | 0.00        | 0.00        | 0.00        | 0.02        | 0.00        | 58        | 32        | 69        | 41        | 83        | 59        | 87        | 59        | 74        | 58        | 65        | 42        |
| 27               | 0.00          | 0.00        | 0.67        | 0.00        | 0.00        | 0.00        | 56        | 38        | 65        | 47        | 76        | 62        | 85        | 57        | 66        | 54        | 57        | 38        |
| 28               | 0.10          | 0.00        | 0.00        | 0.54        | 0.00        | 0.00        | 46        | 35        | 67        | 42        | 81        | 64        | 79        | 62        | 73        | 50        | 56        | 31        |
| 29               | 0.04          | 0.00        | 0.00        | 0.00        | 0.00        | 0.57        | 44        | 35        | 82        | 44        | 88        | 68        | 72        | 52        | 69        | 49        | 64        | 46        |
| 30               | 0.09          | 0.00        | 0.00        | 0.00        | 0.00        | 0.55        | 43        | 35        | 91        | 54        | 88        | 70        | 76        | 47        | 72        | 44        | 64        | 45        |
| 31               |               | 0.00        |             | 0.00        | 0.03        |             |           |           | 86        | 53        |           |           | 82        | 60        | 70        | 57        |           |           |
| <b>Total/Avg</b> | <b>0.65</b>   | <b>3.34</b> | <b>5.55</b> | <b>2.31</b> | <b>4.96</b> | <b>5.63</b> | <b>52</b> | <b>33</b> | <b>63</b> | <b>41</b> | <b>78</b> | <b>56</b> | <b>82</b> | <b>61</b> | <b>75</b> | <b>56</b> | <b>71</b> | <b>51</b> |

**CLIMATIC DATA, 2019 Prosper, ND**

| Date             | Precipitation |             |            |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June       | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.16        | 0.00       | 0.00        | 0.00        | 0.00        | 37        | 29        | 43        | 36        | 74        | 45        | 84        | 63        | 84        | 61        | 72        | 58        |
| 2                | 0.00          | 0.02        | 0.00       | 0.00        | 0.65        | 0.51        | 37        | 29        | 56        | 31        | 75        | 43        | 89        | 59        | 81        | 66        | 71        | 50        |
| 3                | 0.00          | 0.02        | 0.00       | 0.97        | 0.00        | 0.00        | 34        | 24        | 64        | 36        | 90        | 50        | 87        | 63        | 84        | 63        | 66        | 49        |
| 4                | 0.00          | 0.00        | 0.05       | 0.00        | 0.00        | 0.00        | 36        | 25        | 53        | 33        | 95        | 63        | 79        | 61        | 84        | 62        | 71        | 42        |
| 5                | 0.01          | 0.00        | 0.00       | 0.03        | 0.25        | 0.00        | 40        | 34        | 53        | 34        | 86        | 58        | 76        | 60        | 81        | 63        | 74        | 53        |
| 6                | 0.00          | 0.00        | 0.09       | 0.00        | 0.00        | 0.00        | 48        | 35        | 49        | 28        | 91        | 55        | 78        | 55        | 86        | 58        | 73        | 50        |
| 7                | 0.01          | 0.00        | 0.00       | 0.00        | 0.00        | 0.35        | 62        | 38        | 58        | 25        | 97        | 59        | 83        | 53        | 74        | 52        | 54        | 50        |
| 8                | 0.03          | 0.10        | 0.33       | 2.29        | 0.00        | 0.00        | 60        | 38        | 50        | 43        | 92        | 55        | 90        | 64        | 74        | 48        | 66        | 49        |
| 9                | 0.00          | 0.00        | 0.01       | 1.74        | 0.00        | 1.06        | 38        | 27        | 57        | 33        | 72        | 50        | 74        | 63        | 76        | 49        | 61        | 56        |
| 10               | 0.00          | 0.00        | 0.00       | 0.00        | 0.00        | 0.01        | 35        | 27        | 63        | 28        | 77        | 47        | 77        | 61        | 78        | 54        | 66        | 55        |
| 11               | 0.00          | 0.12        | 0.00       | 0.00        | 0.00        | 0.00        | 33        | 25        | 69        | 41        | 81        | 48        | 83        | 57        | 77        | 61        | 63        | 55        |
| 12               | 0.11          | 0.00        | 0.00       | 0.00        | 1.22        | 0.50        | 30        | 26        | 65        | 38        | 71        | 45        | 83        | 67        | 64        | 57        | 57        | 49        |
| 13               | 0.00          | 0.00        | 0.00       | 0.00        | 0.00        | 0.02        | 40        | 17        | 74        | 40        | 77        | 40        | 86        | 66        | 66        | 59        | 64        | 46        |
| 14               | 0.00          | 0.00        | 0.09       | 0.00        | 0.00        | 0.00        | 38        | 19        | 76        | 45        | 85        | 58        | 90        | 67        | 76        | 55        | 67        | 43        |
| 15               | 0.02          | 0.00        | 0.36       | 0.00        | 0.00        | 0.00        | 42        | 30        | 81        | 36        | 64        | 55        | 92        | 69        | 71        | 51        | 84        | 48        |
| 16               | 0.00          | 0.00        | 0.00       | 0.00        | 0.00        | 0.00        | 63        | 32        | 62        | 41        | 66        | 55        | 86        | 64        | 82        | 52        | 87        | 64        |
| 17               | 0.19          | 0.04        | 0.00       | 0.59        | 0.56        | 0.00        | 51        | 42        | 59        | 36        | 67        | 50        | 84        | 66        | 80        | 55        | 88        | 69        |
| 18               | 0.01          | 0.57        | 0.00       | 0.24        | 0.00        | 0.00        | 55        | 38        | 48        | 43        | 75        | 53        | 84        | 64        | 73        | 50        | 78        | 58        |
| 19               | 0.00          | 0.05        | 0.05       | 0.16        | 0.00        | 0.00        | 63        | 32        | 55        | 38        | 75        | 48E       | 83        | 62        | 84        | 50        | 80        | 53        |
| 20               | 0.00          | 0.00        | 0.74       | 0.01        | 0.03        | 1.47        | 64        | 43        | 65        | 31        | 67        | 54        | 81        | 59        | 74        | 52        | 88        | 64        |
| 21               | 0.15          | 0.07        | 0.46       | 0.00        | 0.00        | 0.77        | 61        | 45        | 69        | 40        | 73        | 56        | 75        | 57        | 73        | 49        | 77        | 54        |
| 22               | 0.00          | 0.85        | 0.11       | 0.00        | 0.00        | 0.00        | 64        | 40        | 51        | 45        | 67        | 57        | 79        | 51        | 75        | 46        | 69        | 48        |
| 23               | 0.00          | 0.00        | 0.00       | 0.00        | 0.02        | 0.00        | 69        | 33        | 59        | 46        | 79        | 56        | 83        | 58        | 77        | 52E       | 77        | 46        |
| 24               | 0.00          | 0.36        | 0.77       | 0.00        | 0.00        | 0.02        | 73        | 46        | 65        | 49        | 77        | 60        | 85        | 59        | 78        | 60        | 75        | 51        |
| 25               | 0.00          | 0.00        | 0.00       | 0.03        | 1.21        | 0.00        | 63        | 35        | 61        | 44        | 78        | 57        | 84        | 62        | 69        | 61        | 64        | 46        |
| 26               | 0.00          | 0.00        | 0.00       | 0.00        | 0.03        | 0.00        | 57        | 32        | 64        | 39        | 87        | 55        | 86        | 57        | 74        | 55        | 63        | 45        |
| 27               | 0.00          | 0.00        | 0.38       | 0.00        | 0.06        | 0.00        | 56        | 37        | 63        | 46        | 77        | 63        | 85        | 59        | 64        | 53        | 57        | 37        |
| 28               | 0.14          | 0.00        | 0.00       | 0.08        | 0.00        | 0.00        | 48        | 32        | 73        | 38        | 82        | 60        | 80        | 62        | 71        | 49        | 58        | 35        |
| 29               | 0.23          | 0.00        | 1.36       | 0.00        | 0.00        | 0.45        | 43        | 34        | 84        | 44        | 83        | 62        | 73        | 51        | 69        | 47        | 54        | 48        |
| 30               | 0.02          | 0.00        | 0.00       | 0.00        | 0.00        | 0.65        | 46        | 34        | 94        | 54        | 84        | 69        | 77        | 46        | 72        | 44        | 54        | 44        |
| 31               |               | 0.00        |            | 0.00        | 0.00        |             |           |           | 77        | 53        |           |           | 84        | 59        | 75        | 53        |           |           |
| <b>Total/Avg</b> | <b>0.92</b>   | <b>2.36</b> | <b>4.8</b> | <b>6.14</b> | <b>4.03</b> | <b>5.81</b> | <b>50</b> | <b>33</b> | <b>63</b> | <b>39</b> | <b>79</b> | <b>59</b> | <b>83</b> | <b>60</b> | <b>76</b> | <b>54</b> | <b>69</b> | <b>51</b> |



**CLIMATIC DATA, 2019 St Thomas, ND**

| Date             | Precipitation |            |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May        | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.22       | 0.00        | 0.00        | 0.01        | 0.00        | 43        | 29        | 42        | 36        | 72        | 41        | 83        | 56        | 88        | 57        | 74        | 52        |
| 2                | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 0.47        | 38        | 28        | 57        | 31        | 70        | 39        | 84        | 62        | 88        | 63        | 61        | 43        |
| 3                | 0.00          | 0.02       | 0.00        | 0.07        | 0.00        | 0.00        | 37        | 26        | 62        | 39        | 92        | 49        | 78        | 58        | 87        | 59        | 61        | 47        |
| 4                | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 0.00        | 38        | 28        | 55        | 39        | 94        | 62        | 79        | 56        | 92        | 64        | 74        | 40        |
| 5                | 0.01          | 0.00       | 0.00        | 0.00        | 0.00        | 0.00        | 38        | 31        | 49        | 30        | 83        | 53        | 79        | 58        | 85        | 60        | 74        | 54        |
| 6                | 0.06          | 0.00       | 0.00        | 0.00        | 0.04        | 0.00        | 45        | 31        | 45        | 28        | 86        | 56        | 77        | 49        | 91        | 52        | 74        | 53        |
| 7                | 0.18          | 0.00       | 1.66        | 0.00        | 0.00        | 0.00        | 54        | 37        | 58        | 26        | 101       | 62        | 84        | 49        | 74        | 56        | 56        | 47        |
| 8                | 0.01          | 0.00       | 0.45        | 0.17        | 0.00        | 0.00        | 48        | 32        | 59        | 37        | 75        | 53        | 90        | 65        | 78        | 49        | 63        | 41        |
| 9                | 0.00          | 0.00       | 0.00        | 0.26        | 0.00        | 0.80        | 33        | 23        | 56        | 32        | 68        | 51        | 70        | 63        | 81        | 45        | 57        | 43        |
| 10               | 0.00          | 0.00       | 0.00        | 0.17        | 0.00        | 0.03        | 37        | 25        | 62        | 26        | 70        | 49        | 78        | 60        | 83        | 53        | 59        | 52        |
| 11               | 0.00          | 0.05       | 0.00        | 0.00        | 0.00        | 0.00        | 37        | 27        | 70        | 43        | 70        | 47        | 85        | 55        | 77        | 59        | 61        | 53        |
| 12               | 0.05          | 0.01       | 0.00        | 0.00        | 0.31        | 0.36        | 34        | 27        | 66        | 47        | 69        | 42        | 80        | 61        | 65        | 54        | 53        | 48        |
| 13               | 0.00          | 0.00       | 0.00        | 0.00        | 0.45        | 0.03        | 45        | 21        | 77        | 44        | 79        | 46        | 86        | 57        | 72        | 55        | 66        | 46        |
| 14               | 0.00          | 0.00       | 0.00        | 0.01        | 0.00        | 0.01        | 44        | 27        | 72        | 44        | 83        | 57        | 89        | 65        | 78        | 49        | 71        | 41        |
| 15               | 0.00          | 0.16       | 0.04        | 0.00        | 0.00        | 0.00        | 54        | 32        | 78        | 35        | 64        | 53        | 88        | 68        | 73        | 53        | 84        | 49        |
| 16               | 0.00          | 0.00       | 0.21        | 0.00        | 0.00        | 0.00        | 64        | 32        | 58        | 38        | 59        | 53        | 83        | 61        | 85        | 53        | 87        | 62        |
| 17               | 0.18          | 0.00       | 0.04        | 0.00        | 0.00        | 0.00        | 55        | 41        | 62        | 31        | 66        | 52        | 82        | 62        | 73        | 53        | 86        | 71        |
| 18               | 0.01          | 0.00       | 0.00        | 0.00        | 0.00        | 0.00        | 59        | 35        | 58        | 41        | 76        | 52        | 88        | 61        | 77        | 45        | 80        | 61        |
| 19               | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 0.00        | 65        | 34        | 63        | 40        | 78        | 52        | 84        | 58        | 83        | 55        | 76        | 59        |
| 20               | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 1.16        | 61        | 45        | 70        | 37        | 78        | 54        | 80        | 58        | 76        | 56        | 78        | 61        |
| 21               | 0.00          | 0.00       | 0.22        | 0.00        | 0.00        | 0.82        | 66        | 39        | 74        | 35        | 74        | 52        | 74        | 52        | 75        | 50        | 72        | 54        |
| 22               | 0.00          | 0.22       | 0.06        | 0.00        | 0.00        | 0.00        | 64        | 37        | 59        | 46        | 72        | 57        | 81        | 49        | 75        | 45        | 68        | 50        |
| 23               | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 0.00        | 66        | 34        | 70        | 46        | 79        | 53        | 84        | 53        | 79        | 48        | 77        | 46        |
| 24               | 0.00          | 0.48       | 0.03        | 0.00        | 0.00        | 0.04        | 72        | 45        | 54        | 44        | 79        | 59        | 85        | 53        | 84        | 60        | 70        | 51        |
| 25               | 0.00          | 0.00       | 0.22        | 0.14        | 0.62        | 0.00        | 60        | 38        | 66        | 47        | 77        | 58        | 86        | 59        | 70        | 60        | 61        | 42        |
| 26               | 0.00          | 0.04       | 0.00        | 0.00        | 0.04        | 0.19        | 57        | 31        | 53        | 43        | 85        | 55        | 79        | 58        | 70        | 57        | 59        | 40        |
| 27               | 0.00          | 0.00       | 0.00        | 0.00        | 0.02        | 0.00        | 54        | 33        | 67        | 42        | 85        | 56        | 86        | 61        | 63        | 54        | 55        | 40        |
| 28               | 0.08          | 0.00       | 0.00        | 0.09        | 0.02        | 0.00        | 47        | 30        | 80        | 38        | 85        | 56        | 82        | 58        | 75        | 49        | 53        | 39        |
| 29               | 0.20          | 0.00       | 0.09        | 0.00        | 0.00        | 0.88        | 40        | 32        | 88        | 48        | 84        | 61        | 72        | 48        | 71        | 53        | 47        | 43        |
| 30               | 0.00          | 0.00       | 0.00        | 0.00        | 0.00        | 0.42        | 44        | 29        | 93        | 53        | 88        | 66        | 76        | 41        | 74        | 45        | 47        | 40        |
| 31               |               | 0.00       |             | 0.00        | 0.01        |             |           |           | 75        | 49        |           |           | 84        | 53        | 77        | 50        |           |           |
| <b>Total/Avg</b> | <b>0.78</b>   | <b>1.2</b> | <b>3.02</b> | <b>0.91</b> | <b>1.52</b> | <b>5.21</b> | <b>50</b> | <b>32</b> | <b>64</b> | <b>39</b> | <b>78</b> | <b>53</b> | <b>82</b> | <b>57</b> | <b>78</b> | <b>54</b> | <b>67</b> | <b>49</b> |

**CLIMATIC DATA, 2019 Tappen, ND**

| Date             | Precipitation |             |             |             |             |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.01        | 0.00        | 0.00        | 0.03        | 0.00        | 41        | 24        | 42        | 32        | 73        | 37        | 80        | 58        | 79        | 63        | 76        | 57        |
| 2                | 0.00          | 0.01        | 0.00        | 0.37        | 0.00        | 1.18        | 40        | 27        | 58        | 26        | 75        | 44        | 85        | 57        | 82        | 62        | 68        | 57        |
| 3                | 0.00          | 0.01        | 0.00        | 0.32        | 0.00        | 0.00        | 39        | 19        | 63        | 38        | 87        | 56        | 80        | 60        | 83        | 61        | 67        | 46        |
| 4                | 0.00          | 0.00        | 0.09        | 0.01        | 0.00        | 0.00        | 41        | 28        | 51        | 33        | 88        | 57        | 72        | 59        | 82        | 63        | 78        | 43        |
| 5                | 0.00          | 0.00        | 0.00        | 0.00        | 0.14        | 0.00        | 48        | 34        | 53        | 30        | 82        | 48        | 71        | 57        | 80        | 59        | 74        | 52        |
| 6                | 0.02          | 0.00        | 0.00        | 0.00        | 0.98        | 0.00        | 44        | 33        | 52        | 27        | 85        | 50        | 77        | 53        | 90        | 56        | 72        | 51        |
| 7                | 0.01          | 0.00        | 0.00        | 0.00        | 0.02        | 1.33        | 64        | 38        | 57        | 29        | 93        | 68        | 82        | 58        | 69        | 51        | 58        | 47        |
| 8                | 0.00          | 0.05        | 0.23        | 0.74        | 0.00        | 0.00        | 64        | 34        | 54        | 37        | 76        | 46        | 89        | 63        | 74        | 45        | 59        | 47        |
| 9                | 0.00          | 0.00        | 0.00        | 0.95        | 0.03        | 0.89        | 37        | 22        | 53        | 28        | 70        | 44        | 76        | 61        | 71        | 55        | 61        | 53        |
| 10               | 0.00          | 0.00        | 0.08        | 0.24        | 0.00        | 0.01        | 30        | 21        | 66        | 27        | 75        | 44        | 78        | 60        | 75        | 54        | 70        | 54        |
| 11               | 0.00          | 0.00        | 0.07        | 0.00        | 0.10        | 0.00        | 31        | 24        | 55        | 36        | 76        | 45        | 84        | 60        | 70        | 58        | 59        | 50        |
| 12               | 0.04          | 0.00        | 0.03        | 0.01        | 0.69        | 1.27        | 30        | 24        | 66        | 32        | 70        | 42        | 82        | 62        | 75        | 57        | 55        | 47        |
| 13               | 0.00          | 0.00        | 0.00        | 0.25        | 0.01        | 0.02        | 45        | 12        | 75        | 45        | 83        | 53        | 86        | 64        | 63        | 53        | 63        | 46        |
| 14               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 45        | 26        | 73        | 43        | 84        | 57        | 88        | 68        | 72        | 48        | 77        | 50        |
| 15               | 0.00          | 0.00        | 0.21        | 0.00        | 0.34        | 0.00        | 62        | 31        | 84        | 46        | 74        | 56        | 86        | 62        | 69        | 55        | 87        | 51        |
| 16               | 0.08          | 0.00        | 0.00        | 0.16        | 0.00        | 0.00        | 65        | 27        | 59        | 42        | 67        | 44        | 82        | 60        | 80        | 52        | 89        | 65        |
| 17               | 0.35          | 0.66        | 0.00        | 0.07        | 0.02        | 0.00        | 45        | 39        | 51        | 39        | 67        | 43        | 81        | 62        | 70        | 49        | 85        | 66        |
| 18               | 0.04          | 0.68        | 0.00        | 0.44        | 0.00        | 0.02        | 55        | 35        | 44        | 39        | 73        | 42        | 81        | 60        | 70        | 44        | 79        | 53        |
| 19               | 0.00          | 0.03        | 0.37        | 0.08        | 0.00        | 0.00        | 72        | 30        | 50        | 32        | 58        | 51        | 80        | 58        | 84        | 56        | 78        | 48        |
| 20               | 0.05          | 0.00        | 1.04        | 0.00        | 0.00        | 0.00        | 72        | 46        | 61        | 29        | 70        | 55        | 77        | 54        | 73        | 52        | 87        | 63        |
| 21               | 0.01          | 0.01        | 0.68        | 0.11        | 0.00        | 0.57        | 57        | 39        | 60        | 35        | 67        | 52        | 73        | 52        | 73        | 45        | 70        | 49        |
| 22               | 0.00          | 0.40        | 0.01        | 0.00        | 0.00        | 0.00        | 65        | 31        | 50        | 42        | 73        | 46        | 76        | 49        | 76        | 48        | 69        | 45        |
| 23               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00        | 74        | 33        | 63        | 39        | 75        | 50        | 80        | 57        | 77        | 57        | 75        | 46        |
| 24               | 0.00          | 0.36        | 0.06        | 0.00        | 0.00        | 0.04        | 72        | 41        | 60        | 42        | 79        | 49        | 83        | 62        | 78        | 63        | 70        | 51        |
| 25               | 0.00          | 0.00        | 0.00        | 0.00        | 0.95        | 0.00        | 61        | 29        | 64        | 45        | 77        | 51        | 82        | 61        | 78        | 58        | 62        | 43        |
| 26               | 0.00          | 0.12        | 0.00        | 0.00        | 0.12        | 0.00        | 57        | 26        | 63        | 45        | 81        | 52        | 84        | 53        | 73        | 53        | 61        | 41        |
| 27               | 0.00          | 0.31        | 0.77        | 0.00        | 0.03        | 0.00        | 52        | 30        | 59        | 40        | 77        | 61        | 84        | 52        | 62        | 49        | 51        | 32        |
| 28               | 0.51          | 0.00        | 0.03        | 0.21        | 0.00        | 0.03        | 39        | 31        | 70        | 37        | 79        | 62        | 81        | 58        | 73        | 45        | 55        | 29        |
| 29               | 0.07          | 0.00        | 0.00        | 0.00        | 0.00        | 0.26        | 38        | 32        | 82        | 43        | 83        | 64        | 71        | 51        | 67        | 46        | 50        | 43        |
| 30               | 0.09          | 0.00        | 0.00        | 0.00        | 0.00        | 0.21        | 41        | 32        | 86        | 53        | 80        | 62        | 76        | 46        | 71        | 43        | 54        | 40        |
| 31               |               | 0.00        |             | 0.00        | 0.00        |             |           |           | 70        | 43        |           |           | 83        | 62        | 68        | 49        |           |           |
| <b>Total/Avg</b> | <b>1.27</b>   | <b>2.65</b> | <b>3.67</b> | <b>3.96</b> | <b>3.46</b> | <b>5.83</b> | <b>51</b> | <b>30</b> | <b>61</b> | <b>37</b> | <b>77</b> | <b>51</b> | <b>80</b> | <b>58</b> | <b>74</b> | <b>53</b> | <b>69</b> | <b>49</b> |

**CLIMATIC DATA, 2019 Wahpeton, ND**

| Date             | Precipitation |             |             |            |            |             | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|------------|------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July       | August     | Sept        | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.00          | 0.08        | 0.00        | 0.00       | 0.00       | 0.00        | 38        | 29        | 44        | 38        | 72        | 48        | 83        | 63        | 84        | 63        | 69        | 56        |
| 2                | 0.00          | 0.02        | 0.00        | 0.00       | 0.65       | 0.90        | 41        | 31        | 55        | 36        | 76        | 49        | 85        | 57        | 80        | 67        | 75        | 54        |
| 3                | 0.00          | 0.06        | 0.00        | 1.62       | 0.00       | 0.00        | 38        | 28        | 63        | 39        | 90        | 55        | 87        | 67        | 83        | 65        | 67        | 49        |
| 4                | 0.00          | 0.00        | 0.05        | 0.25       | 0.00       | 0.00        | 40        | 30        | 61        | 34        | 90        | 62        | 79        | 62        | 84        | 63        | 70        | 43        |
| 5                | 0.01          | 0.00        | 0.00        | 0.00       | 0.37       | 0.00        | 52        | 36        | 56        | 34        | 85        | 60        | 71        | 62        | 79        | 62        | 79        | 53        |
| 6                | 0.00          | 0.00        | 0.00        | 0.00       | 0.00       | 0.00        | 54        | 38        | 50        | 31        | 92        | 59        | 76        | 59        | 85        | 59        | 74        | 50        |
| 7                | 0.10          | 0.00        | 0.00        | 0.00       | 0.00       | 0.28        | 63        | 43        | 60        | 26        | 97        | 64        | 82        | 54        | 76        | 53        | 56        | 49        |
| 8                | 0.02          | 0.20        | 0.00        | 1.05       | 0.00       | 0.01        | 62        | 38        | 48        | 40        | 94        | 57        | 86        | 66        | 73        | 48        | 66        | 51        |
| 9                | 0.00          | 0.00        | 0.07        | 1.21       | 0.00       | 0.91        | 41        | 29        | 57        | 35        | 73        | 51        | 79        | 65        | 75        | 49        | 64        | 56        |
| 10               | 0.00          | 0.00        | 0.00        | 0.00       | 0.04       | 0.03        | 35        | 28        | 63        | 29        | 79        | 45        | 77        | 60        | 74        | 61        | 69        | 56        |
| 11               | 0.00          | 0.00        | 0.05        | 0.00       | 0.00       | 0.00        | 33        | 25        | 69        | 41        | 79        | 54        | 82        | 55        | 80        | 58        | 69        | 55        |
| 12               | 0.08          | 0.00        | 0.00        | 0.00       | 0.18       | 0.69        | 30        | 23        | 64        | 43        | 70        | 43        | 84        | 66        | 74        | 62        | 60        | 51        |
| 13               | 0.00          | 0.00        | 0.03        | 0.01       | 0.00       | 0.01        | 37        | 19        | 73        | 39        | 75        | 41        | 85        | 69        | 72        | 61        | 61        | 47        |
| 14               | 0.00          | 0.00        | 0.00        | 1.26       | 0.00       | 0.00        | 37        | 18        | 80        | 47        | 89        | 58        | 89        | 68        | 76        | 58        | 69        | 45        |
| 15               | 0.00          | 0.05        | 0.70        | 0.00       | 0.40       | 0.00        | 40        | 29        | 82        | 38        | 67        | 56        | 89        | 71        | 76        | 53        | 84        | 51        |
| 16               | 0.00          | 0.00        | 0.00        | 0.00       | 0.01       | 0.00        | 59        | 30        | 65        | 45        | 72        | 53        | 84        | 67        | 80        | 54        | 87        | 66        |
| 17               | 0.30          | 0.21        | 0.00        | 0.51       | 0.11       | 0.02        | 49        | 42        | 65        | 42        | 68        | 47        | 85        | 69        | 82        | 59        | 89        | 70        |
| 18               | 0.07          | 1.08        | 0.00        | 0.09       | 0.00       | 0.56        | 55        | 38        | 50        | 42        | 74        | 50        | 86        | 66        | 72        | 53        | 77        | 61        |
| 19               | 0.00          | 0.08        | 0.07        | 0.11       | 0.00       | 0.00        | 62        | 32        | 51        | 40        | 73        | 52        | 82        | 64        | 85        | 52        | 81        | 53        |
| 20               | 0.00          | 0.00        | 0.77        | 0.04       | 0.00       | 0.00        | 70        | 42        | 62        | 38        | 67        | 59        | 80        | 61        | 75        | 52        | 87        | 66        |
| 21               | 0.00          | 0.16        | 0.05        | 0.00       | 0.00       | 0.10        | 60        | 46        | 65        | 46        | 75        | 60        | 75        | 55        | 73        | 47        | 80        | 58        |
| 22               | 0.00          | 0.51        | 0.33        | 0.00       | 0.00       | 0.00        | 65        | 43        | 54        | 46        | 65        | 59        | 77        | 51        | 74        | 46        | 72        | 50        |
| 23               | 0.00          | 0.00        | 0.02        | 0.00       | 0.00       | 0.00        | 68        | 38        | 55        | 47        | 77        | 55        | 82        | 56        | 77        | 53        | 77        | 49        |
| 24               | 0.00          | 0.37        | 0.28        | 0.00       | 0.00       | 0.00        | 76        | 50        | 69        | 50        | 77        | 59        | 82        | 58        | 78        | 60        | 75        | 53        |
| 25               | 0.00          | 0.00        | 0.00        | 0.01       | 0.30       | 0.00        | 65        | 40        | 60        | 46        | 78        | 56        | 82        | 67        | 69        | 61        | 66        | 49        |
| 26               | 0.00          | 0.00        | 0.00        | 0.00       | 0.25       | 0.00        | 57        | 31        | 68        | 41        | 83        | 57        | 88        | 60        | 75        | 55        | 64        | 42        |
| 27               | 0.00          | 0.00        | 0.23        | 0.00       | 0.19       | 0.00        | 56        | 39        | 63        | 47        | 76        | 64        | 84        | 59        | 65        | 54        | 59        | 36        |
| 28               | 0.06          | 0.00        | 0.00        | 0.14       | 0.00       | 0.00        | 48        | 34        | 69        | 42        | 82        | 61        | 72        | 63        | 71        | 50        | 59        | 30        |
| 29               | 0.08          | 0.00        | 0.00        | 0.00       | 0.00       | 1.05        | 45        | 36        | 81        | 47        | 84        | 67        | 73        | 51        | 69        | 49        | 59        | 49        |
| 30               | 0.08          | 0.00        | 0.00        | 0.00       | 0.00       | 1.23        | 48        | 36        | 93        | 55        | 85        | 72        | 75        | 46        | 71        | 43        | 62        | 45        |
| 31               |               | 0.00        |             | 0.00       | 0.00       |             |           |           | 81        | 56        |           |           | 81        | 60        | 73        | 54        |           |           |
| <b>Total/Avg</b> | <b>0.8</b>    | <b>2.82</b> | <b>2.65</b> | <b>6.3</b> | <b>2.5</b> | <b>5.79</b> | <b>51</b> | <b>34</b> | <b>64</b> | <b>41</b> | <b>79</b> | <b>56</b> | <b>81</b> | <b>61</b> | <b>76</b> | <b>56</b> | <b>71</b> | <b>51</b> |

**CLIMATIC DATA, 2019 Williston, ND**

| Date             | Precipitation |             |             |             |             |            | April     |           | May       |           | June      |           | July      |           | August    |           | Sept      |           |
|------------------|---------------|-------------|-------------|-------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                  | April         | May         | June        | July        | August      | Sept       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       | Max       | Min       |
| 1                | 0.03          | 0.00        | 0.00        | 0.08        | 0.12        | 0.00       | 46        | 26        | 48        | 32        | 76        | 41        | 82        | 55        | 81        | 63        | 78        | 54        |
| 2                | 0.00          | 0.02        | 0.00        | 0.00        | 0.00        | 0.24       | 47        | 28        | 64        | 30        | 84        | 52        | 66        | 51        | 92        | 62        | 70        | 56        |
| 3                | 0.00          | 0.01        | 0.01        | 0.01        | 0.00        | 0.00       | 54        | 21        | 66        | 28        | 91        | 58        | 66        | 53        | 95        | 65        | 72        | 49        |
| 4                | 0.04          | 0.02        | 0.00        | 0.00        | 0.65        | 0.00       | 67        | 38        | 48        | 31        | 82        | 57        | 72        | 48        | 87        | 61        | 88        | 50        |
| 5                | 0.00          | 0.00        | 0.00        | 0.00        | 0.13        | 0.00       | 49        | 35        | 49        | 31        | 85        | 52        | 78        | 53        | 82        | 56        | 81        | 53        |
| 6                | 0.07          | 0.00        | 0.00        | 0.00        | 0.00        | 0.27       | 52        | 34        | 54        | 29        | 89        | 53        | 78        | 59        | 87        | 57        | 76        | 49        |
| 7                | 0.02          | 0.00        | 0.00        | 0.00        | 0.02        | 2.06       | 64        | 37        | 56        | 39        | 80        | 57        | 88        | 60        | 73        | 55        | 56        | 47        |
| 8                | 0.00          | 0.00        | 0.18        | 0.00        | 0.00        | 0.00       | 63        | 39        | 57        | 31        | 61        | 44        | 86        | 61        | 78        | 47        | 66        | 46        |
| 9                | 0.00          | 0.00        | 0.00        | 3.12        | 0.00        | 0.83       | 45        | 31        | 54        | 28        | 70        | 42        | 70        | 58        | 82        | 61        | 57        | 53        |
| 10               | 0.00          | 0.03        | 0.00        | 0.00        | 0.42        | 0.01       | 35        | 23        | 69        | 39        | 76        | 42        | 77        | 55        | 77        | 59        | 67        | 51        |
| 11               | 0.00          | 0.03        | 0.00        | 0.00        | 0.00        | 1.18       | 43        | 23        | 56        | 39        | 71        | 51        | 85        | 61        | 71        | 57        | 58        | 51        |
| 12               | 0.00          | 0.00        | 0.00        | 0.14        | 0.31        | 1.39       | 49        | 24        | 70        | 32        | 77        | 42        | 82        | 58        | 76        | 54        | 52        | 48        |
| 13               | 0.00          | 0.00        | 0.00        | 0.01        | 0.00        | 0.00       | 56        | 23        | 77        | 46        | 89        | 55        | 90        | 58        | 65        | 52        | 72        | 45        |
| 14               | 0.00          | 0.00        | 0.71        | 0.02        | 0.24        | 0.00       | 62        | 36        | 72        | 49        | 86        | 60        | 86        | 63        | 78        | 48        | 75        | 50        |
| 15               | 0.00          | 0.00        | 0.11        | 0.00        | 0.28        | 0.00       | 61        | 34        | 80        | 47        | 75        | 50        | 81        | 63        | 77        | 55        | 89        | 53        |
| 16               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00       | 61        | 31        | 62        | 42        | 66        | 46        | 79        | 61        | 85        | 53        | 88        | 54        |
| 17               | 0.18          | 0.78        | 0.00        | 0.00        | 0.04        | 0.30       | 58        | 37        | 51        | 32        | 69        | 50        | 82        | 57        | 63        | 48        | 84        | 60        |
| 18               | 0.00          | 0.05        | 0.00        | 0.00        | 0.00        | 0.07       | 62        | 29        | 49        | 36        | 75        | 47        | 83        | 60        | 78        | 44        | 75        | 56        |
| 19               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00       | 80        | 40        | 56        | 34        | 73        | 57        | 77        | 50        | 92        | 51        | 80        | 48        |
| 20               | 0.00          | 0.00        | 0.46        | 0.00        | 0.00        | 0.45       | 63        | 45        | 63        | 36        | 69        | 54        | 77        | 50        | 74        | 51        | 71        | 55        |
| 21               | 0.06          | 0.00        | 0.84        | 0.00        | 0.00        | 0.08       | 64        | 40        | 64        | 42        | 65        | 52        | 79        | 52        | 78        | 50        | 62        | 47        |
| 22               | 0.00          | 0.00        | 0.05        | 0.00        | 0.00        | 0.00       | 64        | 31        | 63        | 45        | 66        | 50        | 83        | 54        | 85        | 60        | 71        | 43        |
| 23               | 0.00          | 0.00        | 0.03        | 0.00        | 0.00        | 0.00       | 74        | 44        | 70        | 39        | 75        | 49        | 87        | 58        | 84        | 64        | 78        | 48        |
| 24               | 0.00          | 0.43        | 0.08        | 0.00        | 0.01        | 0.00       | 67        | 43        | 52        | 41        | 73        | 51        | 88        | 66        | 85        | 66        | 67        | 47        |
| 25               | 0.03          | 0.00        | 0.00        | 0.00        | 0.00        | 0.01       | 57        | 35        | 73        | 38        | 76        | 50        | 83        | 57        | 82        | 57        | 62        | 42        |
| 26               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.00       | 58        | 29        | 63        | 45        | 83        | 51        | 82        | 50        | 70        | 54        | 61        | 44        |
| 27               | 0.05          | 0.00        | 0.00        | 0.00        | 0.00        | 0.04       | 47        | 38        | 64        | 43        | 85        | 63        | 94        | 53        | 68        | 47        | 53        | 41        |
| 28               | 0.36          | 0.00        | 1.03        | 0.00        | 0.00        | 0.42       | 41        | 29        | 72        | 39        | 82        | 61        | 81        | 57        | 86        | 43        | 47        | 40        |
| 29               | 0.01          | 0.00        | 0.15        | 0.00        | 0.00        | 0.48       | 40        | 27        | 84        | 50        | 80        | 64        | 76        | 47        | 71        | 48        | 43        | 40        |
| 30               | 0.00          | 0.00        | 0.00        | 0.00        | 0.00        | 0.07       | 41        | 22        | 84        | 51        | 76        | 56        | 86        | 56        | 74        | 46        | 43        | 38        |
| 31               |               | 0.00        |             | 0.00        | 0.00        |            |           |           | 65        | 47        |           |           | 94        | 62        | 80        | 51        |           |           |
| <b>Total/Avg</b> | <b>0.85</b>   | <b>1.37</b> | <b>3.65</b> | <b>3.38</b> | <b>2.22</b> | <b>7.9</b> | <b>56</b> | <b>32</b> | <b>63</b> | <b>38</b> | <b>77</b> | <b>52</b> | <b>81</b> | <b>56</b> | <b>79</b> | <b>54</b> | <b>68</b> | <b>49</b> |