

Crop Production Costs— 2019

Best of the Best

Minot, ND

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Farm Management Specialist

February 5, 2019

NDSU

EXTENSION

Which crops to grow in 2019?

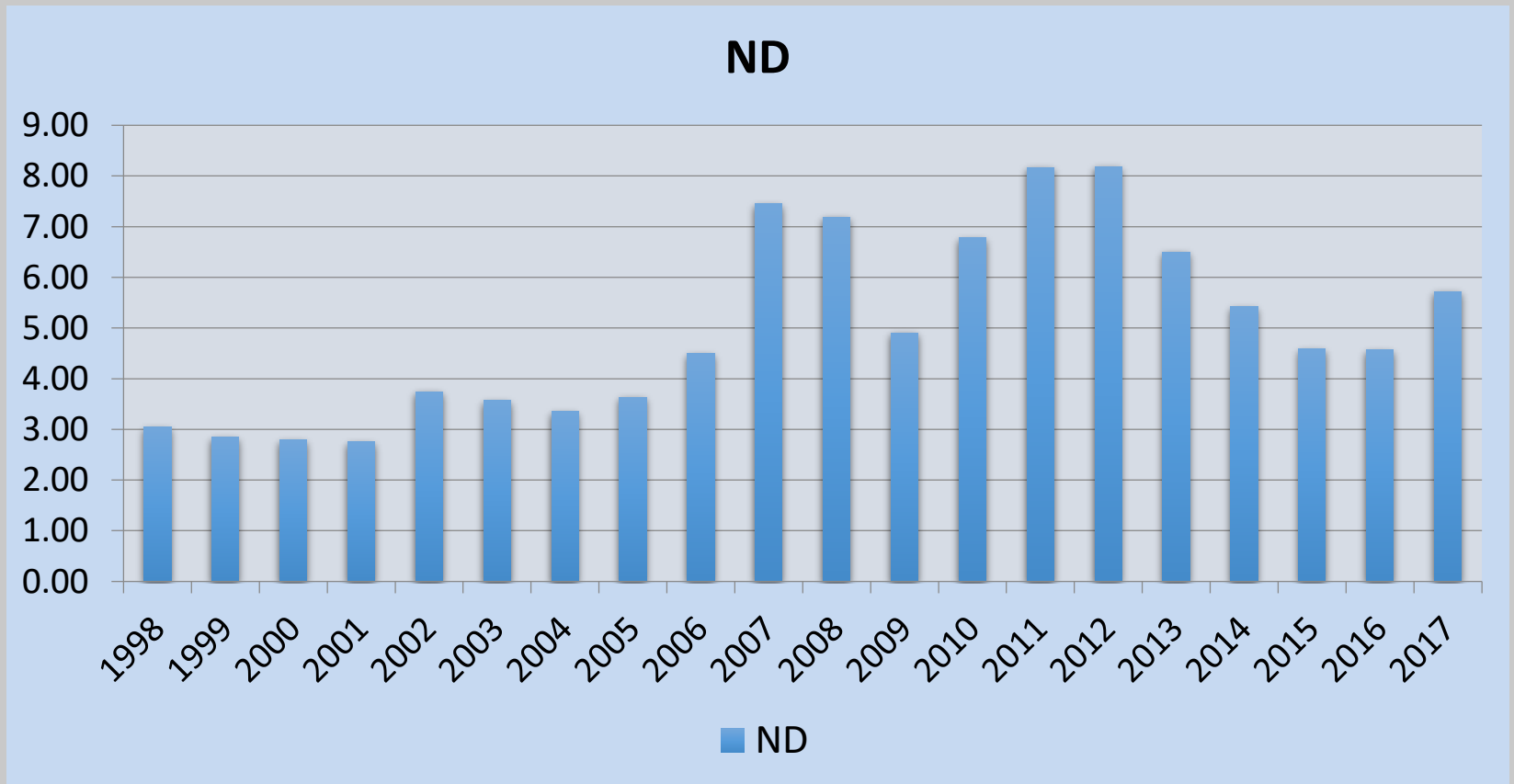
- Rotation
- Price and market outlook
- Marketing issues
- Machinery needs
- Profitability
- Return over variable costs
- Labor capacity

Increased Input Costs

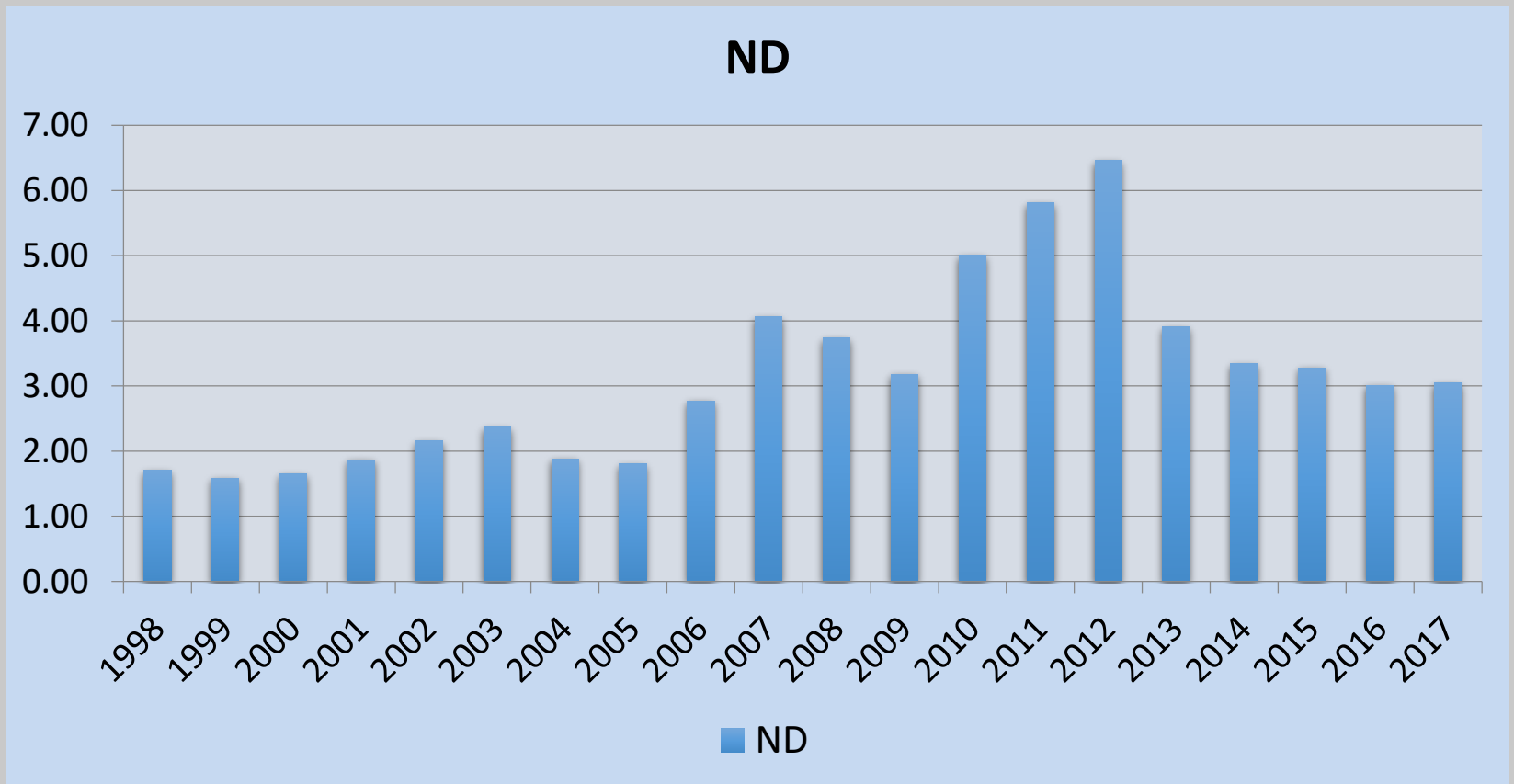
(Overall Slightly Higher)

- Seed flat
- Fertilizer up some
- Chemicals higher
- Interest up slightly
- Fuel down
- Crop insurance lower(w/enterprise units)
- Machinery Cost up as always
- Rent slightly lower

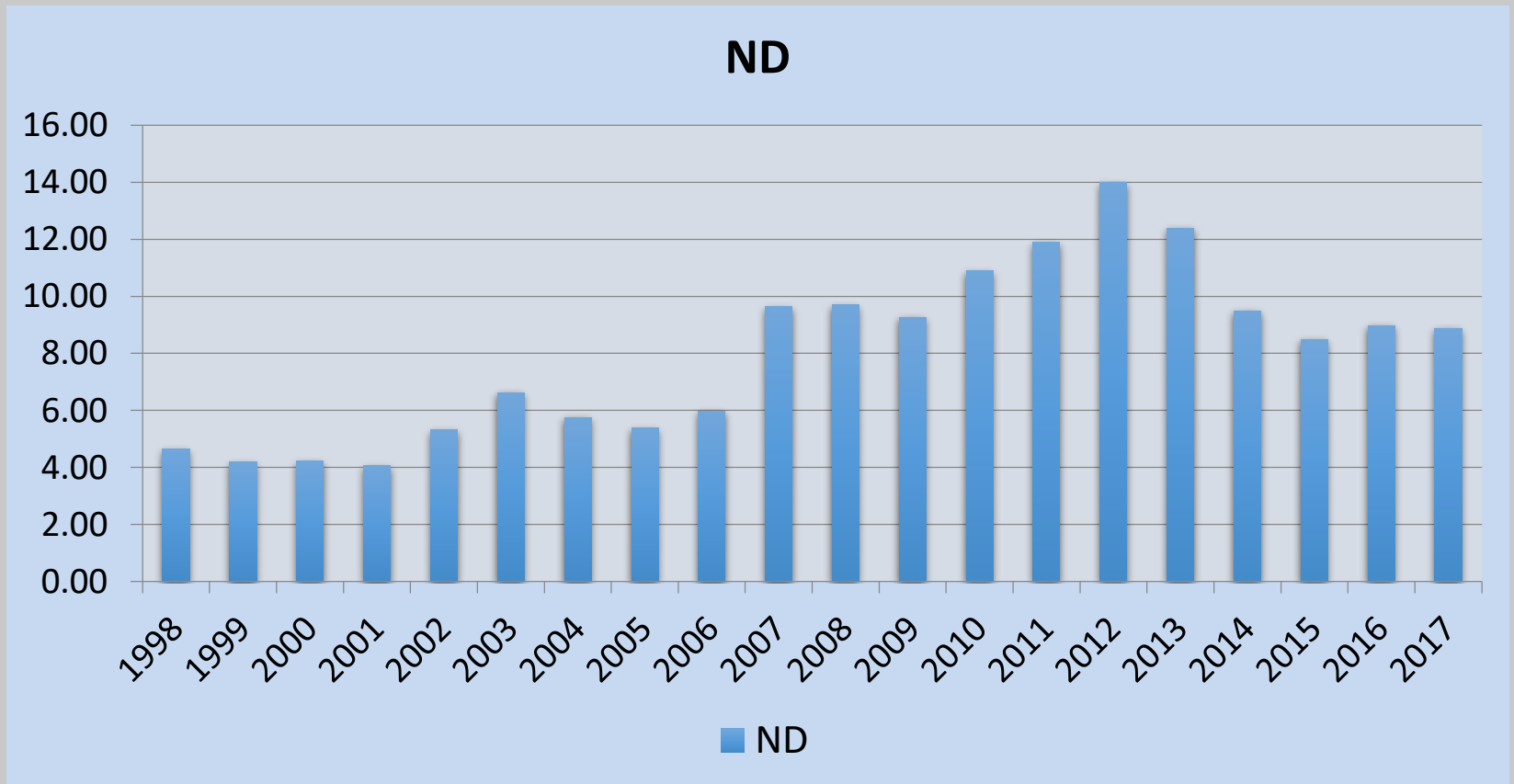
N.D. Spring Wheat Price (Dollars Per Bushel)



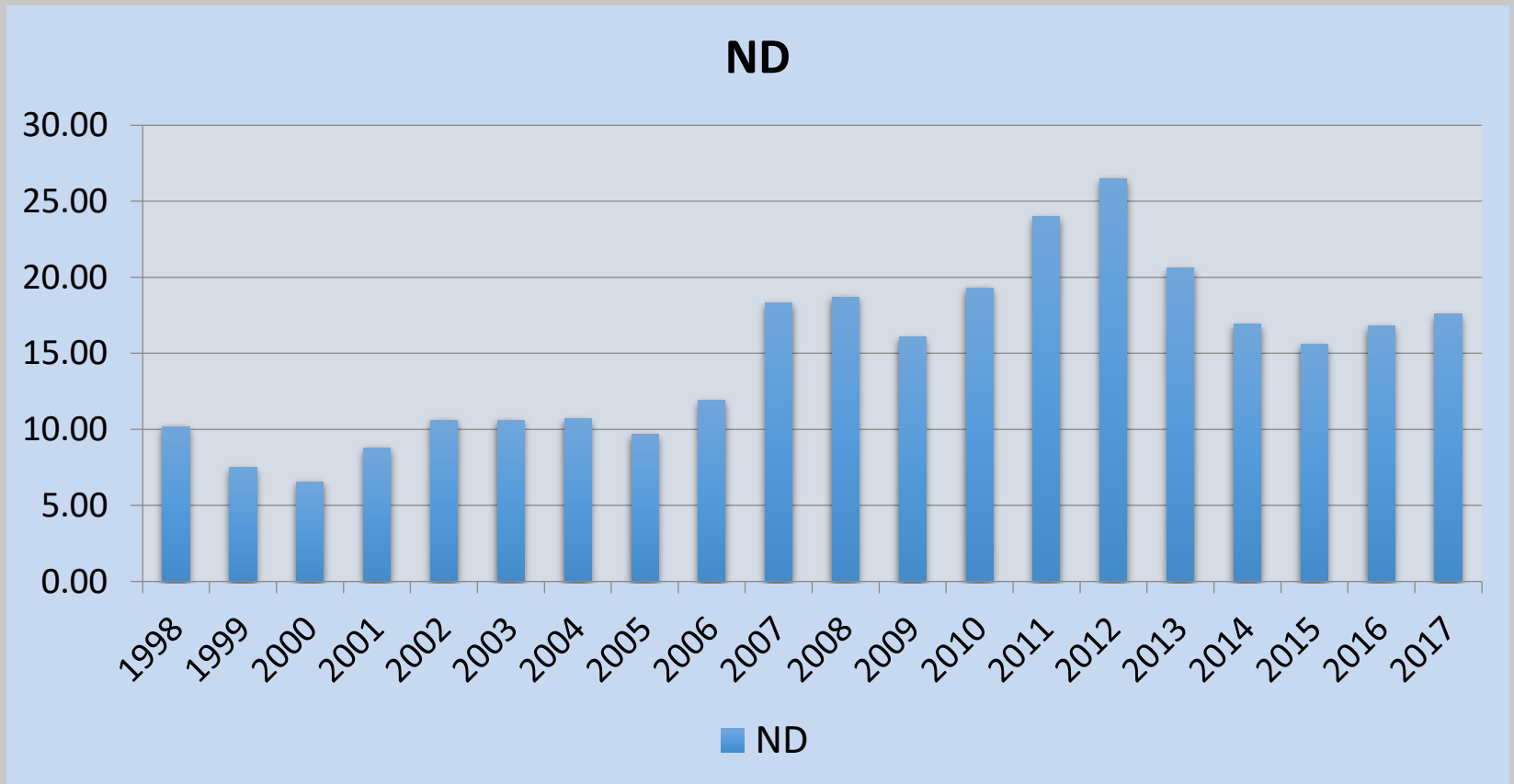
N.D. Corn Price (Dollars Per Bushel)



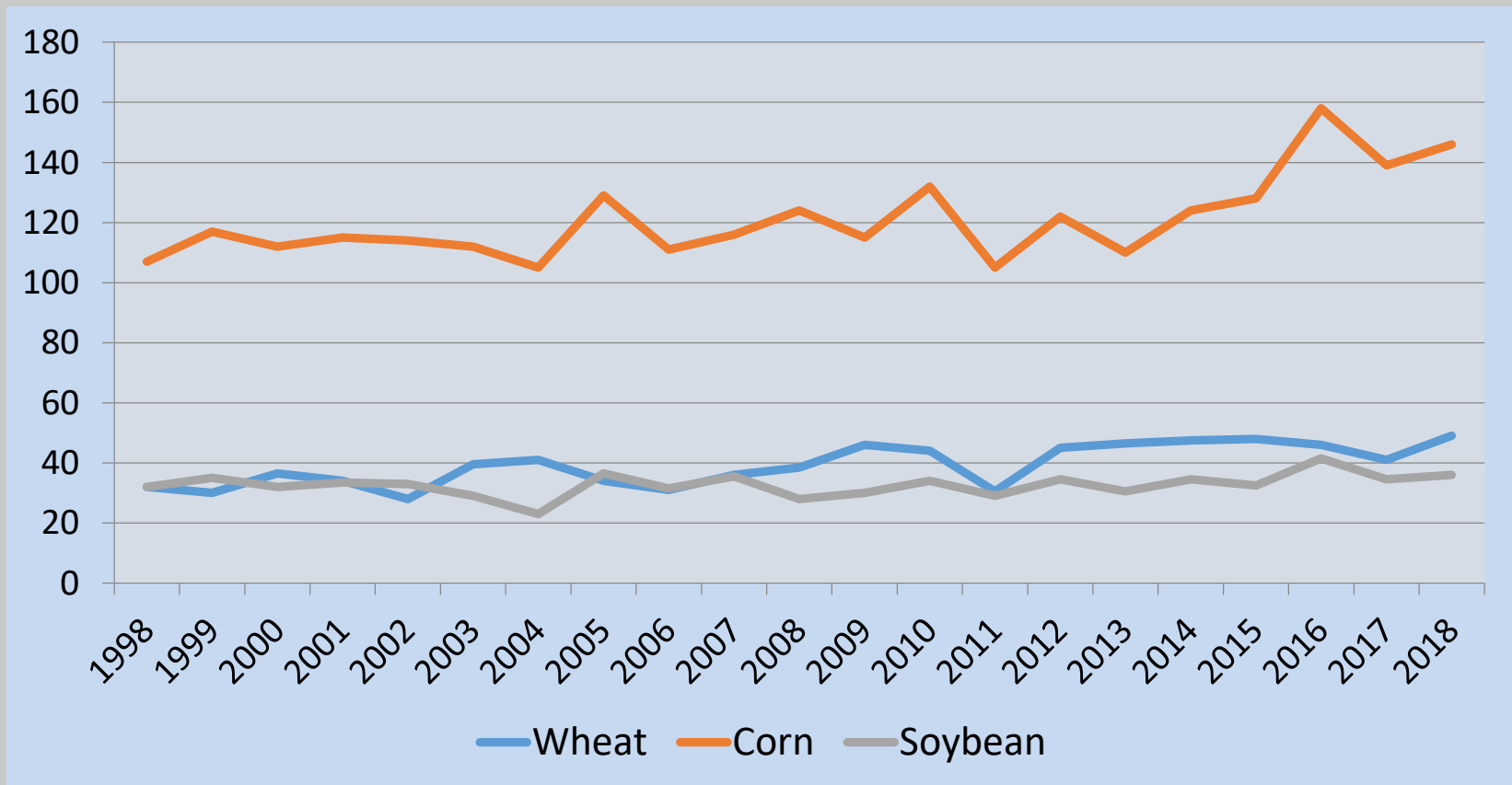
N.D. Soybean Price (Dollars Per Bushel)



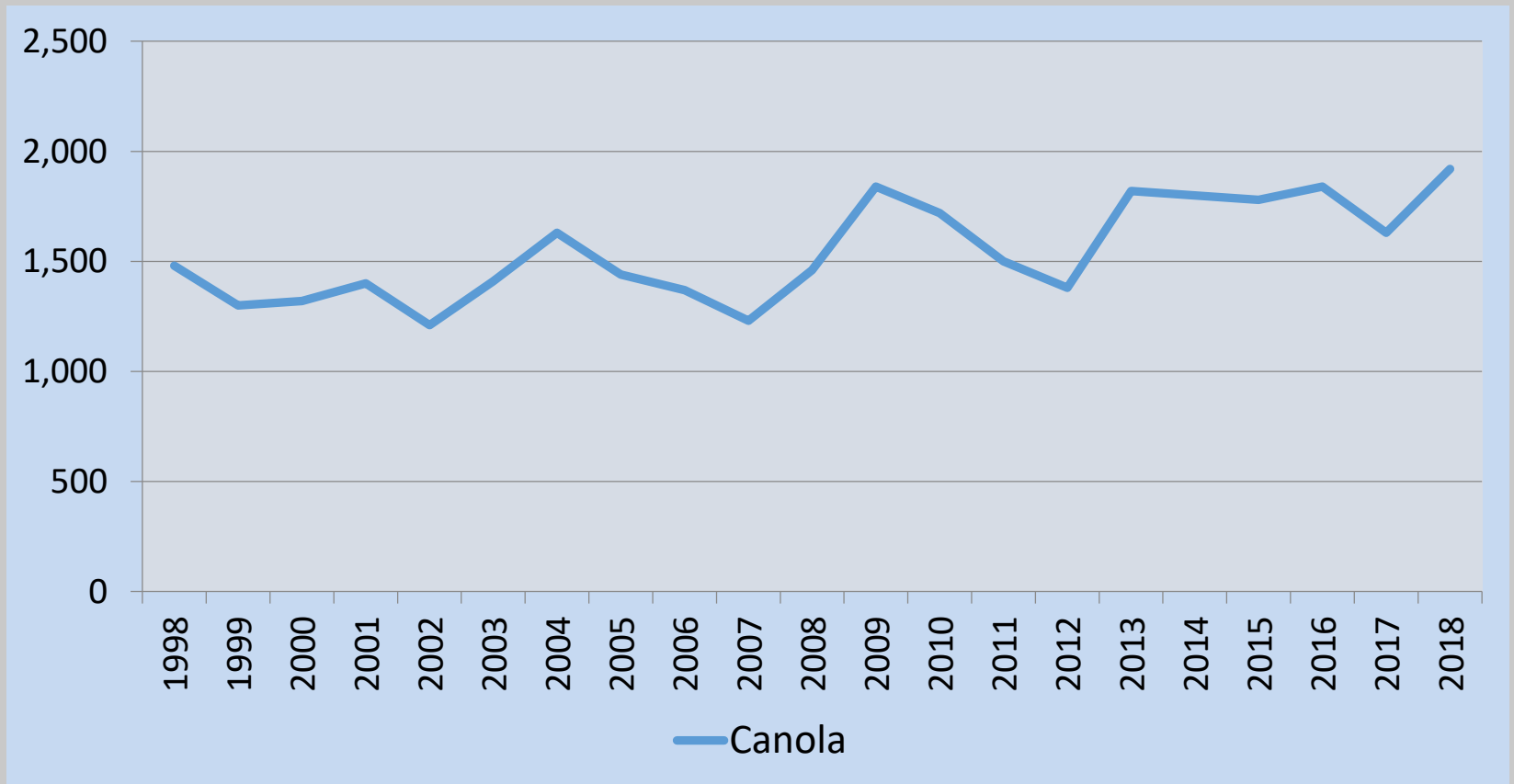
N.D. Canola Price (Dollars Per CWT)



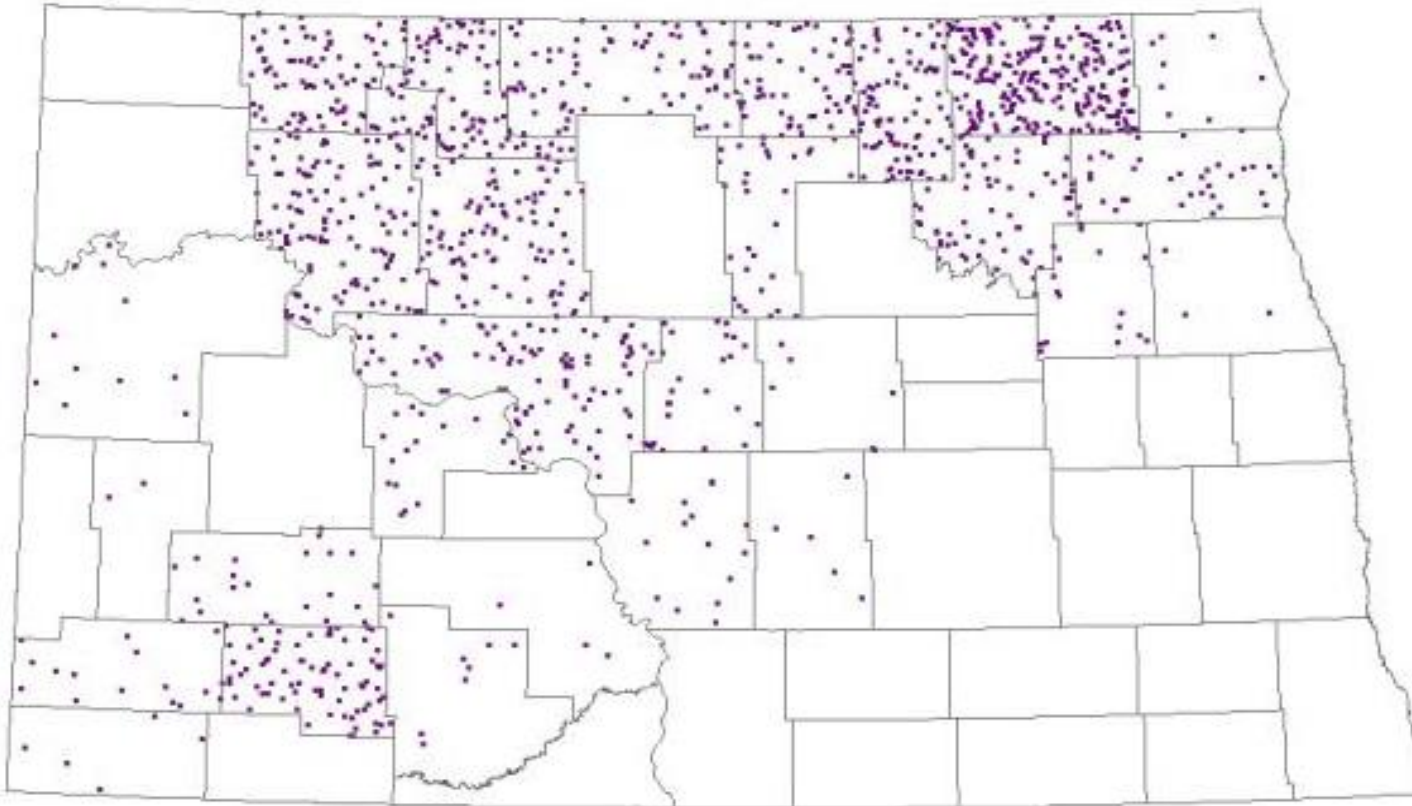
N.D. Spring Wheat, Corn and Soybean Yield Per Acre (Bu)



N.D. Canola Yield Per Acre (Lb.)



Canola Harvested North Dakota: 2017



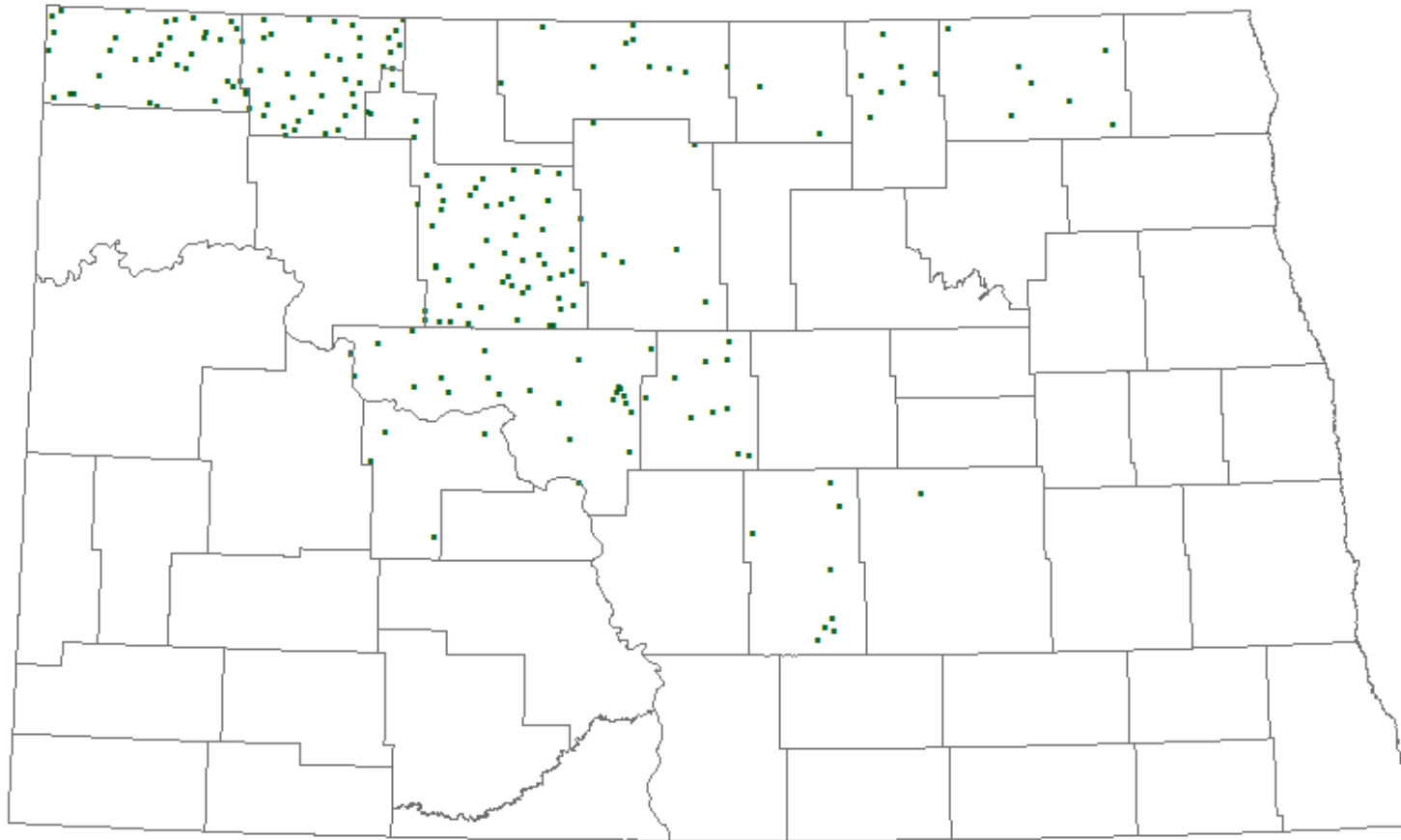
1 Dot = 1,000 Acres

Dots randomly placed within county.

Blank counties represent none harvested or undisclosed data.

NDASS

Flaxseed Production North Dakota: 2017



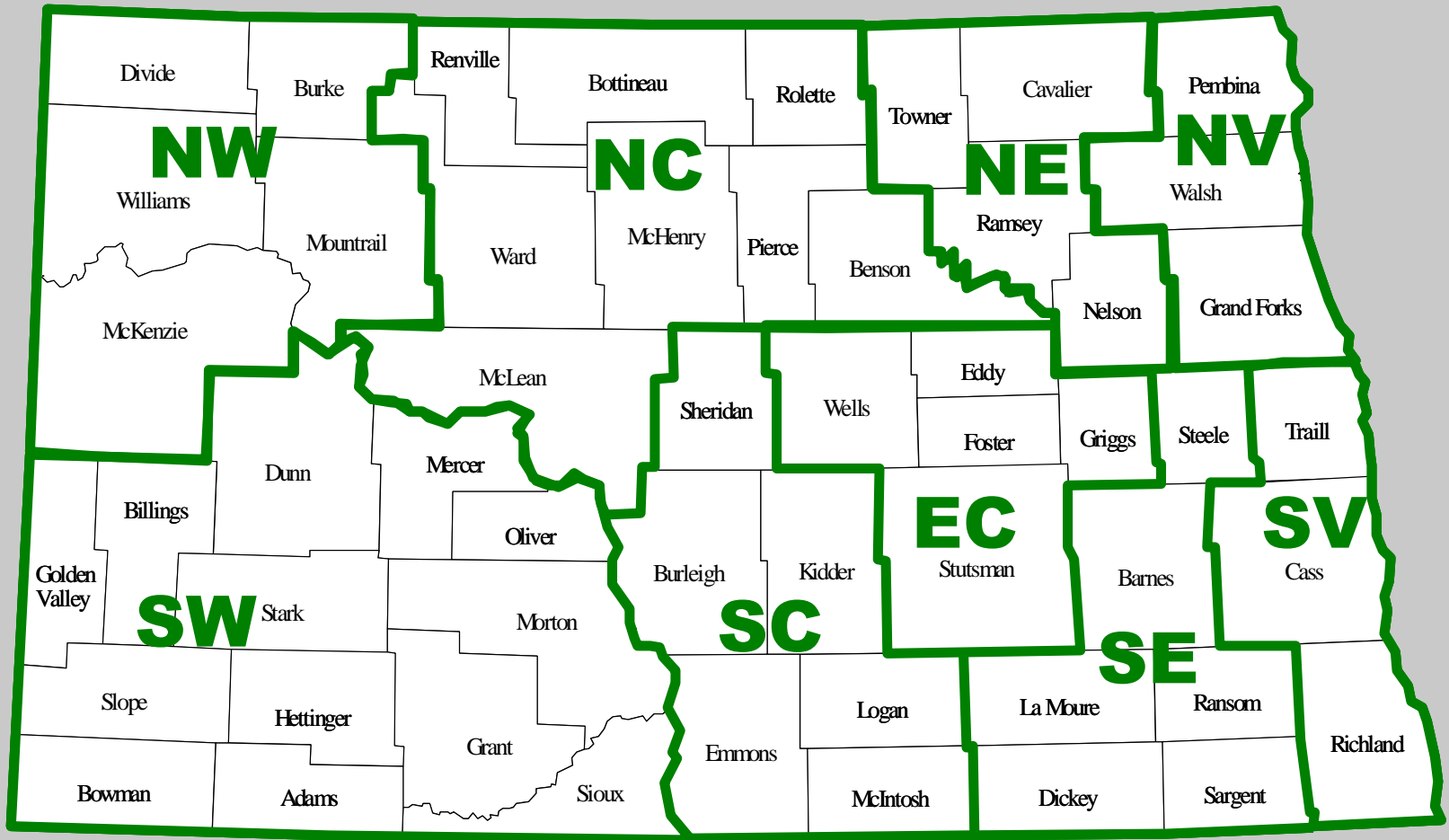
1 Dot = 10,000 Bushels

Dots randomly placed within county.

Blank counties represent none harvested or undisclosed data.

NDASS

NDSU Crop Budget Regions



Spring Wheat

Durum

| | Per Acre | Your Figures | Per Acre | Your Figures |
|---|---------------|-----------------|---------------|-----------------|
| Market Yield | 49 | _____ | 44 | _____ |
| Market Price | 5.55 | _____ | 5.96* | _____ |
| MARKET INCOME | 271.95 | _____ | 262.24 | _____ |
| DIRECT COSTS | | | | |
| -Seed | 17.43 | _____ | 23.00 | _____ |
| -Herbicides | 26.20 | _____ | 26.20 | _____ |
| -Fungicides** | 9.00 | _____ | 17.00 | _____ |
| -Insecticides*** | 0.00 | _____ | 0.00 | _____ |
| -Fertilizer | 68.33 | _____ | 59.78 | _____ |
| -Crop Insurance | 7.00 | _____ | 8.70 | _____ |
| -Fuel & Lubrication | 13.11 | _____ | 12.87 | _____ |
| -Repairs | 19.56 | _____ | 19.42 | _____ |
| -Drying | 0.00 | _____ | 0.00 | _____ |
| -Miscellaneous | 1.50 | _____ | 1.50 | _____ |
| -Operating Interest | 4.74 | _____ | 4.93 | _____ |
| SUM OF LISTED DIRECT COSTS | 166.87 | _____ | 173.39 | _____ |
| INDIRECT (FIXED) COSTS | | | | |
| -Misc. Overhead | 8.50 | _____ | 8.41 | _____ |
| -Machinery Depreciation | 22.37 | _____ | 22.11 | _____ |
| -Machinery Investment | 13.32 | _____ | 13.18 | _____ |
| -Land Charge | 51.00 | _____ | 51.00 | _____ |
| SUM OF LISTED INDIRECT COSTS | 95.19 | _____ | 94.70 | _____ |
| SUM OF ALL LISTED COSTS | 262.06 | _____ | 268.09 | _____ |
| RETURN TO LABOR & MANAGEMENT | 9.89 | _____ | (5.85) | _____ |
| LISTED COSTS PER BUDGET UNIT | | | | |
| | (bu): | | (bu): | |
| -Direct Costs | 3.41 | _____ | 3.94 | _____ |
| -Indirect Costs | 1.94 | _____ | 2.15 | _____ |
| -Total Costs | 5.35 | _____ | 6.09 | _____ |

Wheat notes:

*Durum price is for milling quality. There is risk of lower quality and lower price.

**Includes seed treatment, an early season foliar fungicide, and a late season fungicide. Prothioconazole or metconazole containing products are highly recommended when conditions are favorable for fusarium head blight (scab).

***Cereal grain aphid insecticide would cost about \$4. Wheat midge insecticide would cost about \$6.

Price Projections 2019 (NC)

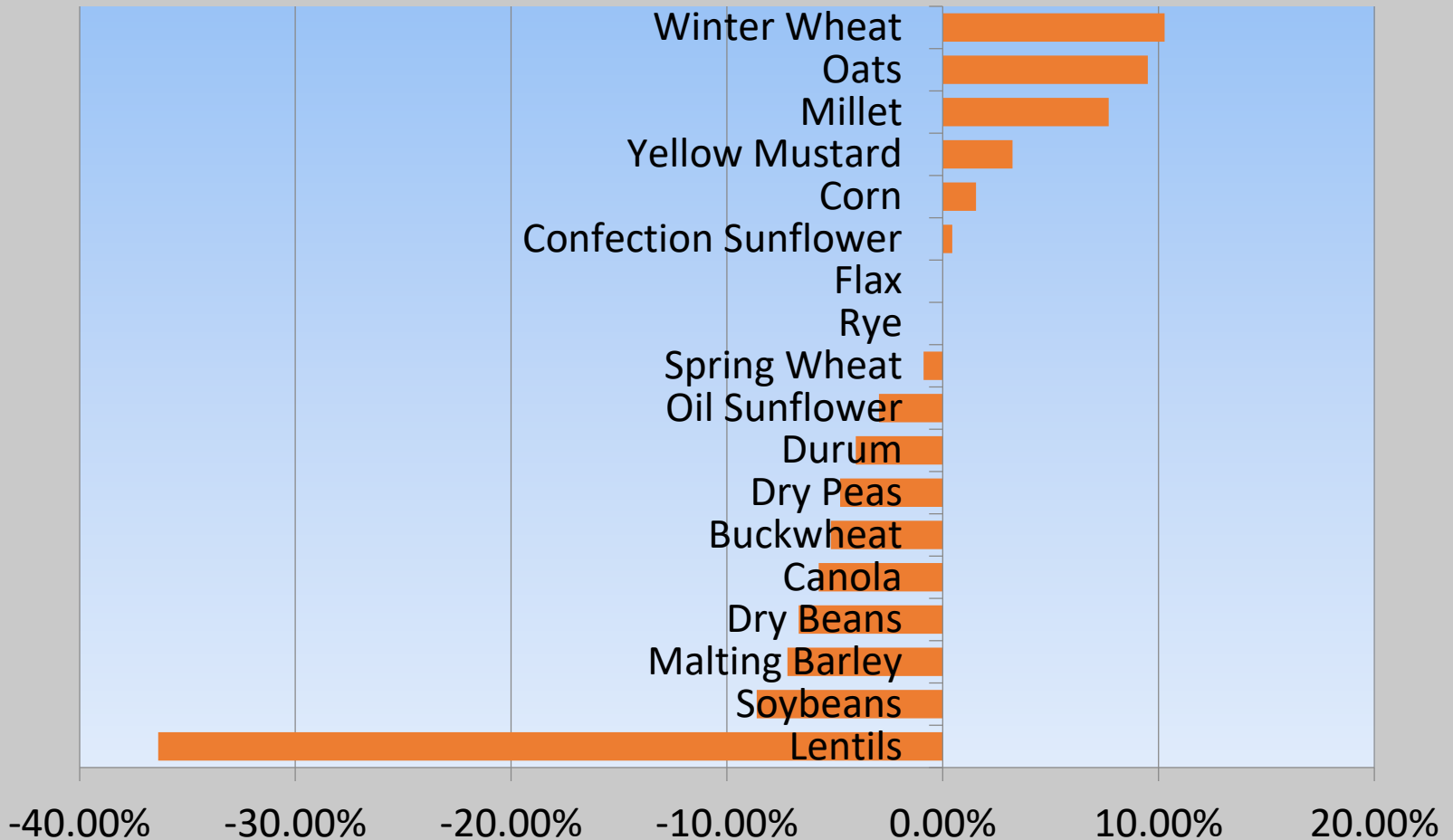
| | |
|-----------------|---------|
| Spring Wheat | \$5.55 |
| Durum | \$5.96 |
| Malting Barley | \$3.22 |
| Corn | \$3.30 |
| Soybeans | \$7.95 |
| Drybeans | \$0.21 |
| Oil Sunflower | \$0.164 |
| Conf. Sunflower | \$0.227 |
| Canola | \$0.164 |
| Flax | \$9.46 |
| Field Peas (bu) | \$6.00 |
| Oats | \$2.19 |
| Lentils | \$.14 |
| Yellow Mustard | \$0.32 |
| Buckwheat | \$0.183 |
| Millet | \$0.07 |
| Winter Wheat | \$4.72 |
| Rye | \$4.33 |

Price Projection Changes 2018 to 2019 (NC)

| | |
|----------------------|---------|
| Lentils | -36.36% |
| Soybeans | -8.62% |
| Malting Barley | -7.20% |
| Dry Beans | -6.67% |
| Canola | -5.75% |
| Buckwheat | -5.18% |
| Dry Peas | -4.76% |
| Durum | -4.03% |
| Oil Sunflower | -2.96% |
| Spring Wheat | -0.89% |
| Rye | 0.00% |
| Flax | 0.00% |
| Confection Sunflower | 0.44% |
| Corn | 1.54% |
| Yellow Mustard | 3.23% |
| Millet | 7.69% |
| Oats | 9.50% |
| Winter Wheat | 10.28% |

North Central Budgets

Change in Price Projections 2018-2019



North Central Direct Costs 2019

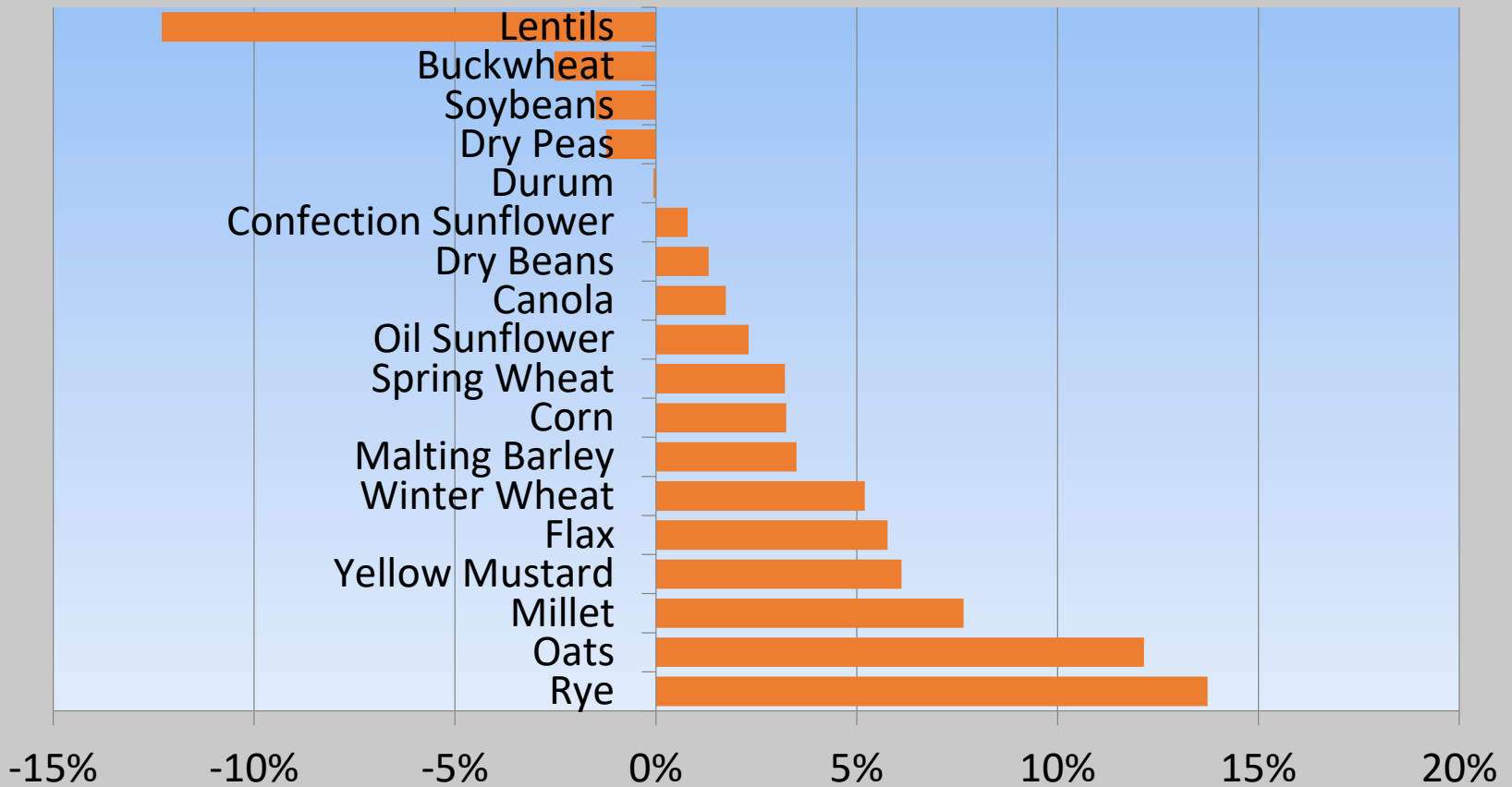
| | |
|----------------------|--------|
| Corn | 266.87 |
| Dry Beans | 236.48 |
| Canola | 204.06 |
| Confection Sunflower | 196.18 |
| Durum | 173.39 |
| Oil Sunflower | 169.73 |
| Spring Wheat | 166.87 |
| Winter Wheat | 165.32 |
| Malting Barley | 160.79 |
| Dry Peas | 143.86 |
| Soybeans | 139.54 |
| Lentils | 137.42 |
| Rye | 136.71 |
| Oats | 133.30 |
| Yellow Mustard | 131.39 |
| Flax | 119.61 |
| Buckwheat | 97.03 |
| Millet | 68.62 |

NC Changes in Direct Costs 2018 to 2019

| | |
|----------------------|---------|
| Rye | 13.73% |
| Oats | 12.15% |
| Millet | 7.66% |
| Yellow Mustard | 6.11% |
| Flax | 5.77% |
| Winter Wheat | 5.20% |
| Malting Barley | 3.50% |
| Corn | 3.24% |
| Spring Wheat | 3.21% |
| Oil Sunflower | 2.31% |
| Canola | 1.74% |
| Dry Beans | 1.31% |
| Confection Sunflower | 0.79% |
| Durum | -0.06% |
| Dry Peas | -1.24% |
| Soybeans | -1.50% |
| Buckwheat | -2.53% |
| Lentils | -12.30% |

North Central Budgets

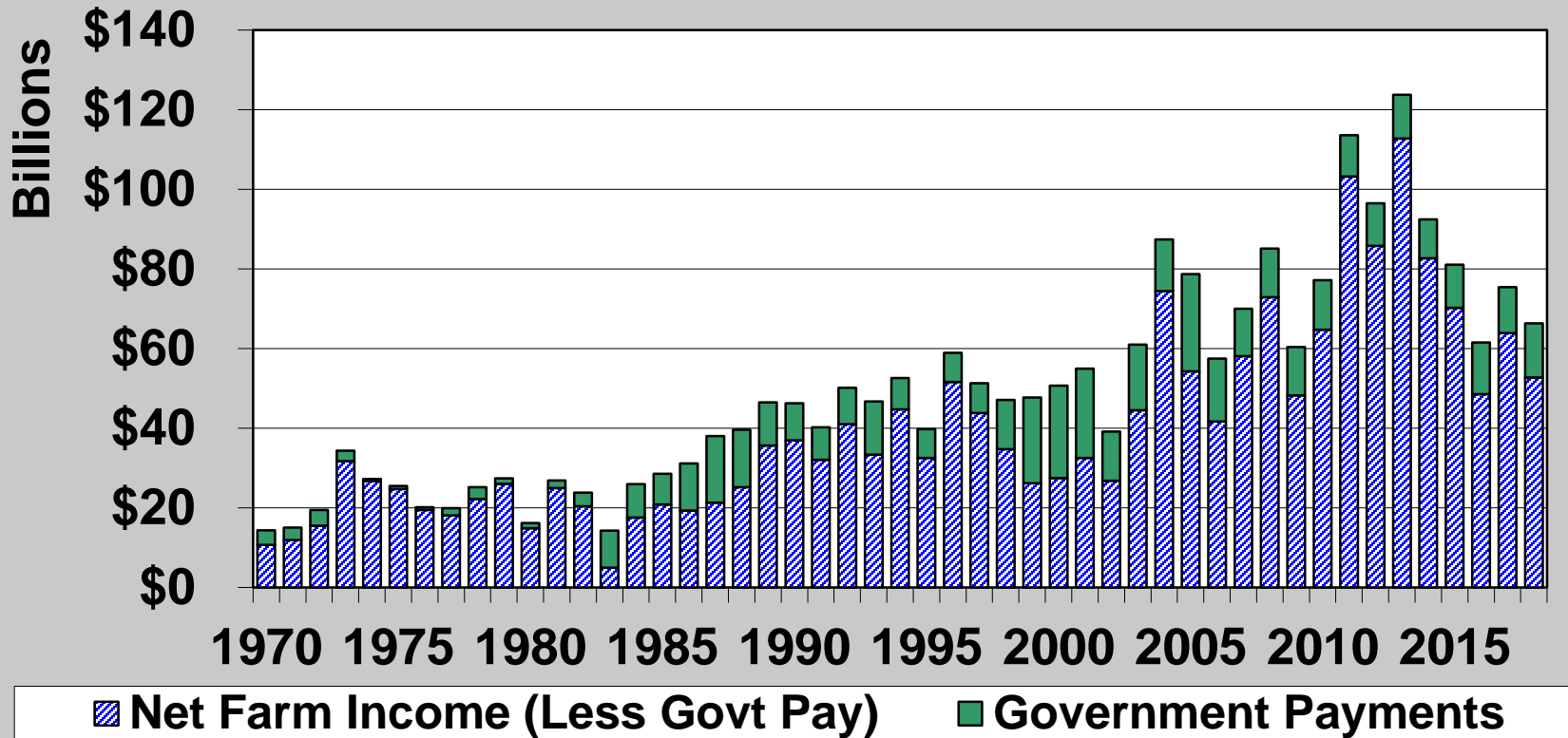
Change in Direct Costs 2018-2019



Per Acre Return to Labor & Management NC 2019

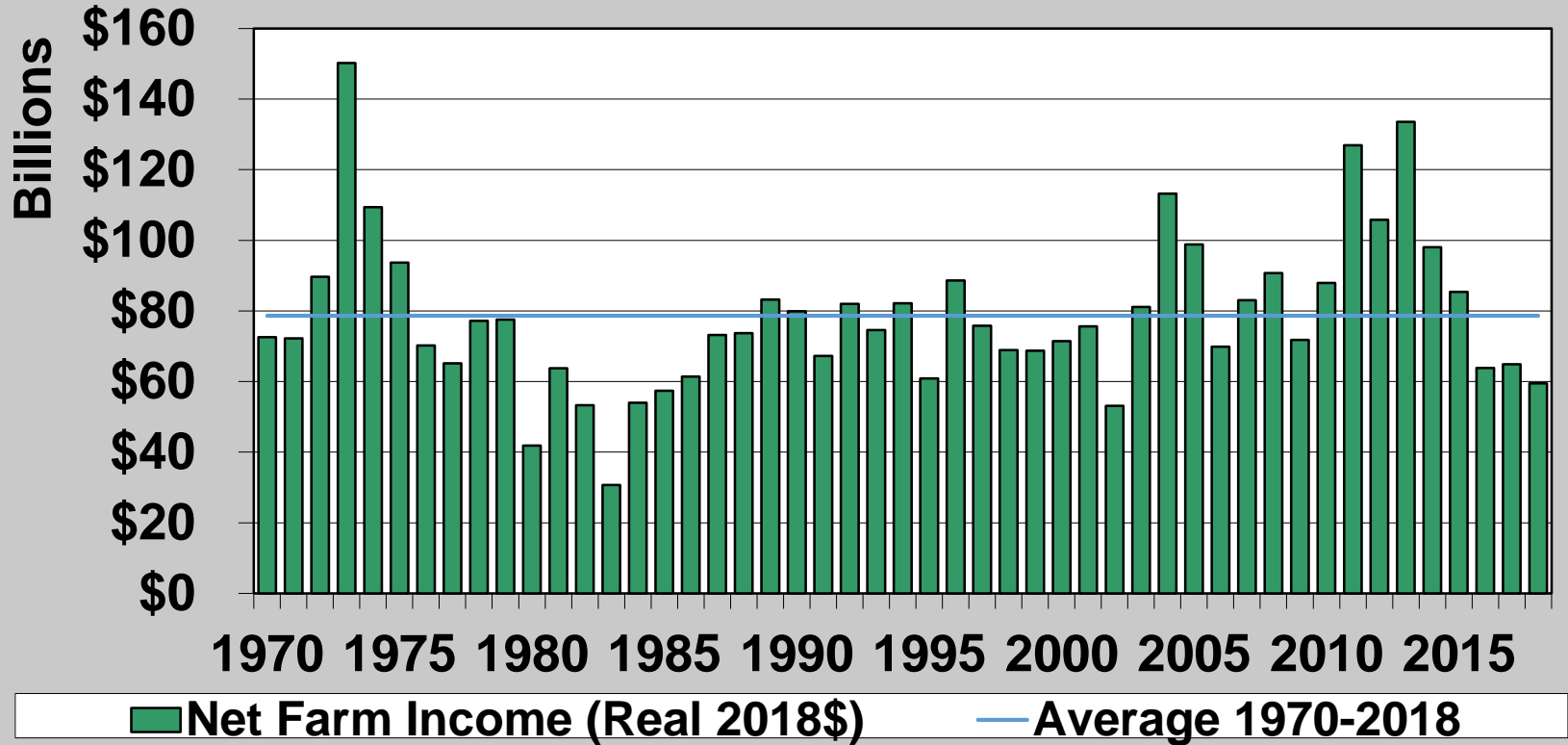
| | |
|----------------------|---------|
| Yellow Mustard | 61.64 |
| Soybeans | 32.74 |
| Dry Beans | 30.57 |
| Dry Peas | 12.52 |
| Spring Wheat | 9.89 |
| Confection Sunflower | 1.00 |
| Canola | (1.78) |
| Durum | (5.85) |
| Flax | (7.35) |
| Oil Sunflower | (11.01) |
| Winter Wheat | (15.24) |
| Buckwheat | (16.79) |
| Corn | (22.56) |
| Rye | (27.90) |
| Malting Barley | (32.38) |
| Lentils | (34.97) |
| Oats | (61.46) |
| Millet | (73.57) |

U.S. Net Farm Income



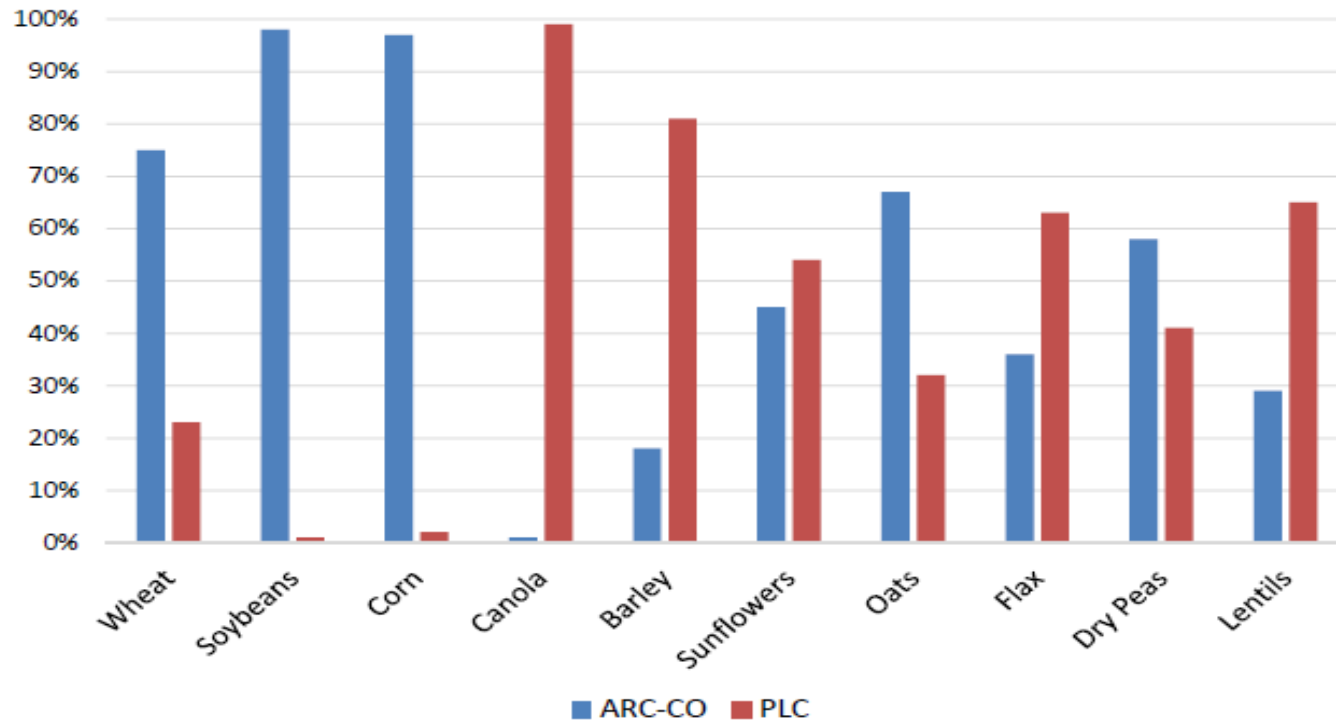
Sources: USDA-ERS and author calculations.

U.S. Real Net Farm Income



Sources: USDA-ERS and author calculations.

North Dakota Base Acre ARC/PLC Election (%)



Farm Program Outlook

Average PLC Payment Rates in North Dakota*

| Commodity | Average PLC Payment Yield | Average PLC Payment Rates per Base Acre (\$/base acre) | | | | |
|----------------|---------------------------|--|--------|---------|---------|--------|
| | | 2014 | 2015 | 2016 | 2017 | 2018 |
| Corn | 51 b/ac | \$0.00 | \$3.36 | \$14.85 | \$14.85 | \$5.14 |
| Grain Sorghum | 15 b/ac | 0.00 | 8.09 | 14.66 | 9.22 | 6.95 |
| Soybeans | 14 b/ac | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Wheat | 15 b/ac | 0.00 | 7.93 | 20.93 | 10.14 | 4.55 |
| Barley | 22 b/ac | 0.00 | 0.00 | 0.00 | 9.02 | 7.52 |
| Sunflower Seed | 382 lb/ac | 0.00 | 3.11 | 15.55 | 16.68 | 18.37 |
| Canola | 692 lb/ac | 19.12 | 26.76 | 20.88 | 15.59 | 22.35 |

* PLC payment projections (prior to payment limits and budget sequestration) based on weighted average PLC payment yields and price projections for 2018 from USDA-WAOB and USDA-FSA as of December 2018. Sources: USDA-FSA, USDA-NASS, and USDA-WAOB.

Farm Program Outlook

Average ARC-CO Payment Rates in North Dakota*

| Commodity | County/Practice Combinations | Average ARC-CO Payment Rates per Base Acre (\$/base acre) | | | | |
|----------------|------------------------------|---|---------|---------|---------|--------|
| | | 2014 | 2015 | 2016 | 2017 | 2018 |
| Corn | 56 | \$38.58 | \$43.39 | \$10.06 | \$14.11 | \$0.00 |
| Grain Sorghum | 38 | 22.59 | 20.64 | 16.36 | 12.91 | 1.11 |
| Soybeans | 53 | 10.53 | 28.65 | 3.12 | 11.13 | 0.00 |
| Wheat | 53 | 1.20 | 15.03 | 26.36 | 18.09 | 0.00 |
| Barley | 53 | 0.85 | 0.17 | 8.57 | 18.37 | 0.00 |
| Sunflower Seed | 53 | 13.00 | 8.36 | 9.53 | 0.00 | 14.96 |
| Canola | 49 | 5.63 | 20.07 | 14.22 | 17.62 | 12.43 |

* ARC-CO payment projections (prior to payment limits and budget sequestration) based on 5-year Olympic average yields and current price projections for 2018 from USDA-NASS, USDA-WAOB, and USDA-FSA as of December 2018. Sources: USDA-FSA, USDA-NASS, and USDA-WAOB.

Trade Assistance from USDA

Market Facilitation Program

| Commodity | First and Second Round Total Payment Rate (on 100% of production) | Estimated Total Payments (\$ Millions) |
|-----------------------------|--|---|
| Corn | \$0.01/bu | \$192 |
| Cotton | 0.06/lb | 553.8 |
| Dairy (milk) | 0.12/cwt | 254.8 |
| Pork (hogs) | 8.00/head | 580.6 |
| Sorghum | 0.86/bu | 313.6 |
| Soybeans | 1.65/bu | 7,259.4 |
| Wheat | 0.14/bu | 238.4 |
| Shelled Almonds | 0.03/lb | 63.3 |
| Fresh Sweet Cherries | 0.16/lb | 111.5 |
| Total | | \$9,567.4 |

Profit vs Cash Flow

- Recognize the difference between net income and net cash income
- Do not have to make a profit every year
- Must meet cash obligations every year

Profitability or Net Profit

- An accounting of the value of all resources used to produce a product
- Some costs are non-cash
 - depreciation
 - unpaid owner/operator and family labor
 - Inventory adjustments (whole farm)

Cash Flow

- Cash sales must be adequate to pay all cash expenses
- Any shortfall must be made up by borrowing

CROP COMPARE

Objective



- The objective of “crop compare” is to calculate the cash price needed for other crops to yield the same return over variable costs as the base crop

User Input

- All yields
- All variable costs
- Futures price and basis for base crop

Shortcoming of Crop Compare

- Fixed costs are not included
 - Machinery ownership
 - Owner/operator labor
- Differences in management and risk are not included

Adjustments for fixed costs:

- Machinery
- Storage
- Labor
- Management
- Risk

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

| | |
|---|---------|
| Select reference crop | S. Wht |
| Enter the S. Wht futures price | \$6.10 |
| Enter expected local basis (cash-futures) | -\$0.55 |
| Expected S. Wht local cash price | \$5.55 |

| | S. Wht | Durum | Barley | Corn | Soybean | Oil Snfir | Conf Snfir | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye |
|----------------------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|---------|---------|--------|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 |
| Relative Price | \$5.55 | \$6.34 | \$3.80 | \$3.39 | \$7.43 | \$0.175 | \$0.232 | \$0.171 | \$10.23 | \$0.168 | \$5.94 | \$0.194 | \$0.263 | \$3.02 | \$0.213 | \$0.134 | \$5.31 | \$5.25 |
| Income | \$272 | \$279 | \$266 | \$372 | \$245 | \$275 | \$302 | \$310 | \$225 | \$243 | \$249 | \$342 | \$237 | \$239 | \$203 | \$174 | \$271 | \$242 |
| Variable costs: | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 |
| Return Over Variable Costs | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 | \$106 |

Comparisons:

Wheat at \$5.55

equates to corn at \$3.39

equates to soybeans at \$7.43

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

| | | | |
|---|-----|------------------|------------|
| Select reference crop | | | Com |
| Enter the | Com | futures price | \$3.90 |
| Enter expected local basis (cash-futures) | | | -\$0.60 |
| Expected | Com | local cash price | \$3.30 |

| | S. Wht | Durum | Barley | Com | Soybean | Oil Snflr | Conf Snflr | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye | |
|----------------------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|---------|---------|--------|--|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 | |
| Relative Price | \$5.36 | \$6.13 | \$3.67 | \$3.30 | \$7.14 | \$0.169 | \$0.225 | \$0.166 | \$9.81 | \$0.161 | \$5.71 | \$0.189 | \$0.253 | \$2.90 | \$0.203 | \$0.127 | \$5.13 | \$5.05 | |
| Income | \$263 | \$270 | \$257 | \$363 | \$236 | \$266 | \$292 | \$300 | \$216 | \$234 | \$240 | \$333 | \$228 | \$229 | \$193 | \$165 | \$261 | \$232 | |
| Variable costs: | | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 | |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 | |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 | |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 | |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 | |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 | |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 | |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 | |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 | |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 | |
| Return Over Variable Costs | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | \$96 | |

Comparisons:

Corn at \$3.30

equates to wheat at \$5.36

equates to soybeans at \$7.14

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

| | |
|---|---------|
| Select reference crop | Soybean |
| Enter the Soybean futures price | \$9.25 |
| Enter expected local basis (cash-futures) | -\$1.30 |
| Expected Soybean local cash price | \$7.95 |

| | S. Wht | Durum | Barley | Corn | Soybean | Oil Snfir | Conf Snfir | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye | |
|----------------------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|---------|---------|--------|--|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 | |
| Relative Price | \$5.90 | \$6.73 | \$4.05 | \$3.54 | \$7.95 | \$0.186 | \$0.245 | \$0.181 | \$11.02 | \$0.179 | \$6.35 | \$0.204 | \$0.282 | \$3.24 | \$0.231 | \$0.147 | \$5.65 | \$5.63 | |
| Income | \$289 | \$296 | \$284 | \$390 | \$262 | \$293 | \$319 | \$327 | \$242 | \$260 | \$267 | \$359 | \$254 | \$256 | \$220 | \$191 | \$288 | \$259 | |
| Variable costs: | | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 | |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 | |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 | |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 | |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 | |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 | |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 | |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 | |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 | |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 | |
| Return Over Variable Costs | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | \$123 | |

Comparisons:

Soybeans at \$7.95

equates to wheat at \$5.90

equates to corn at \$3.54

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

Select reference crop

Canola

Enter the Canola futures price \$0.16 <= enter cash price if no futures market

Enter expected local basis (cash-futures) \$0.00 <= enter 0 basis if no futures market

Expected Canola local cash price \$0.16

| | S. Wht | Durum | Barley | Corn | Soybean | Oil Snflr | Conf Snflr | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye |
|-----------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|--------|---------|--------|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 |
| Relative Price | \$5.29 | \$6.05 | \$3.62 | \$3.27 | \$7.04 | \$0.17 | \$0.22 | \$0.16 | \$9.65 | \$0.16 | \$5.63 | \$0.19 | \$0.25 | \$2.86 | \$0.20 | \$0.12 | \$5.06 | \$4.98 |
| Income | \$259 | \$266 | \$254 | \$360 | \$232 | \$263 | \$289 | \$297 | \$212 | \$230 | \$237 | \$329 | \$224 | \$226 | \$190 | \$161 | \$258 | \$229 |
| Variable costs: | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 |
| Return Over | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 | \$93 |
| Variable Costs | | | | | | | | | | | | | | | | | | |

Note: - Only variable costs are considered in this comparison. You can include an amount under "misc." to account for any differences between crops in fixed costs, labor, management and risk.

Comparisons:

Canola at \$0.164

equates to wheat at \$5.29

equates to corn at \$3.27

equates to soybeans at \$7.04

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

Select reference crop

Enter the Flax futures price \$9.46 <= enter cash price if no futures market
 Enter expected local basis (cash-futures) \$0.00 <= enter 0 basis if no futures market
 Expected Flax local cash price \$9.46

| | S. Wht | Durum | Barley | Corn | Soybean | Oil Snflr | Conf Snflr | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye |
|-----------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|--------|---------|--------|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 |
| Relative Price | \$5.20 | \$5.95 | \$3.56 | \$3.23 | \$6.91 | \$0.16 | \$0.22 | \$0.16 | \$9.46 | \$0.16 | \$5.53 | \$0.18 | \$0.24 | \$2.81 | \$0.20 | \$0.12 | \$4.98 | \$4.88 |
| Income | \$255 | \$262 | \$249 | \$355 | \$228 | \$258 | \$285 | \$293 | \$208 | \$226 | \$232 | \$325 | \$220 | \$222 | \$186 | \$157 | \$254 | \$225 |
| Variable costs: | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 |
| Return Over | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 | \$89 |
| Variable Costs | | | | | | | | | | | | | | | | | | |

Note: - Only variable costs are considered in this comparison. You can include an amount under "misc." to account for any differences between crops in fixed costs, labor, management and risk.

Comparisons:

Flax at \$9.46

equates to wheat at \$5.20

equates to corn at \$3.23

equates to soybeans at \$6.91

Prices which provide the same Return over Variable Costs between crops - North Central N.D.

| | | | |
|---|-----------|------------------|---|
| Select reference crop | | | Field Pea |
| Enter the | Field Pea | futures price | \$6.00 <= enter cash price if no futures market |
| Enter expected local basis (cash-futures) | | | \$0.00 <= enter 0 basis if no futures market |
| Expected | Field Pea | local cash price | \$6.00 |

| | S. Wht | Durum | Barley | Corn | Soybean | Oil Snflr | Conf Snflr | Canola | Flax | Lentils | Field Pea | Drybeans | Mustard | Oats | Buckwht | Millet | W.Wht | Rye |
|-----------------|---------|---------|---------|---------|---------|-----------|------------|---------|---------|---------|-----------|----------|---------|---------|---------|--------|---------|--------|
| Yield | 49 | 44 | 70 | 110 | 33 | 1570 | 1300 | 1810 | 22 | 1450 | 42 | 1760 | 900 | 79 | 950 | 1300 | 51 | 46 |
| Relative Price | \$5.60 | \$6.40 | \$3.84 | \$3.41 | \$7.51 | \$0.18 | \$0.23 | \$0.17 | \$10.35 | \$0.17 | \$6.00 | \$0.20 | \$0.27 | \$3.06 | \$0.22 | \$0.14 | \$5.36 | \$5.31 |
| Income | \$275 | \$282 | \$269 | \$375 | \$248 | \$278 | \$304 | \$312 | \$228 | \$246 | \$252 | \$345 | \$240 | \$241 | \$205 | \$177 | \$273 | \$244 |
| Variable costs: | | | | | | | | | | | | | | | | | | |
| Seed | \$17.00 | \$23.00 | \$13.20 | \$77.43 | \$64.10 | \$31.50 | \$48.60 | \$57.50 | \$14.40 | \$21.00 | \$42.00 | \$56.10 | \$25.20 | \$13.00 | \$20.00 | \$7.00 | \$10.45 | \$9.30 |
| Herbicide | 26.20 | 26.20 | 24.30 | 24.00 | 26.00 | 34.00 | 36.20 | 23.10 | 29.20 | 35.50 | 35.90 | 46.90 | 20.20 | 10.60 | 18.00 | 9.60 | 24.50 | 6.50 |
| Fungicide | 9.00 | 17.00 | 17.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 1.50 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.00 | 0.00 |
| Insecticide | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fertilizer | 68.33 | 59.78 | 58.98 | 80.70 | 8.30 | 38.78 | 29.45 | 76.37 | 28.96 | 7.04 | 12.24 | 46.09 | 26.91 | 56.53 | 16.46 | 16.27 | 71.75 | 63.20 |
| Crop Insurance | 7.00 | 8.70 | 7.20 | 12.00 | 5.40 | 8.40 | 12.60 | 8.50 | 9.90 | 9.60 | 7.40 | 11.40 | 16.30 | 11.50 | 7.70 | 0.00 | 7.20 | 16.70 |
| Fuel & Lube | 13.11 | 12.87 | 14.05 | 19.22 | 10.37 | 13.68 | 13.27 | 12.52 | 12.61 | 13.20 | 12.23 | 14.64 | 12.38 | 15.43 | 12.12 | 12.86 | 12.24 | 12.06 |
| Repairs | 19.56 | 19.42 | 19.99 | 24.64 | 16.41 | 19.33 | 19.09 | 18.77 | 19.65 | 21.68 | 19.01 | 21.63 | 19.16 | 20.94 | 18.49 | 19.44 | 17.48 | 17.07 |
| Drying | 0.00 | 0.00 | 0.00 | 19.80 | 0.00 | 4.71 | 3.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Misc. | 1.50 | 1.50 | 1.50 | 1.50 | 5.00 | 9.50 | 17.50 | 1.50 | 1.50 | 9.50 | 9.50 | 13.00 | 1.50 | 1.50 | 1.50 | 1.50 | 8.00 | 7.50 |
| Operating Int. | 4.73 | 4.93 | 4.57 | 7.58 | 3.97 | 4.82 | 5.58 | 5.80 | 3.40 | 3.91 | 4.09 | 6.72 | 3.73 | 3.79 | 2.76 | 1.95 | 4.70 | 3.87 |
| Total Var.Costs | \$166 | \$173 | \$161 | \$267 | \$140 | \$170 | \$196 | \$204 | \$120 | \$137 | \$144 | \$236 | \$131 | \$133 | \$97 | \$69 | \$165 | \$136 |
| Return Over | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 | \$108 |
| Variable Costs | | | | | | | | | | | | | | | | | | |

Note: - Only variable costs are considered in this comparison. You can include an amount under "misc." to account for any differences between crops in fixed costs, labor, management and risk.

Comparisons:

Field Peas at \$6.00 per bu
equates to wheat at \$5.60
equates to corn at \$3.41
equates to soybeans at \$7.51

???

What crop to grow in 2019?

Back to this slide...

Which crops to grow in 2019?

- Rotation
- Price and market outlook
- Marketing issues
- Machinery needs
- Profitability
- Return over variable costs
- Labor capacity

Crop Compare

(an Excel spreadsheet)
available to download at:

<https://www.ag.ndsu.edu/farmmanagement/tools>



NDSU Projected Crop Budgets

<https://www.ag.ndsu.edu/farmmanagement/crop-budget-archive>



Thank you,
Any Questions?



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