

Summary of new information in the 2012 Weed Control Guide:

Address for NDSU Weed Science home page: www.ndsu.edu/weeds - Web version of ND Weed Control Guide.

Discontinued products: Achieve Liquid, Avenge, Assert, Balance, Betanex, Cutback, Cutback M, Garrison, GlyKamba, KambaMaster, Progress, Puma (brand name), Pursuit Plus, Rage D-Tech, Rattler Plus, Recoil, Rifle Plus, Sencor (brand name), Shotgun, Spartan Advance, Sortie

New generic equivalent products (partial list):

Tacoma (Winfield)	= Puma
Parity (West Central)	= Puma
Solida (Cheminova)	= Resolve
Glory (MANA)	= Metribuzin (Sencor)
Fomesafen 1.88 (Solara/Willowood)	= Flexstar
Fomesafen 2 (Solara/Willowood)	= Reflex
Clean Slate (Nufarm)	= Stinger
Diquat E-Ag (Nufarm)	= Reglone
Patriot (Nufarm)	= Escort
Trooper Extra (Nufarm)	= Picloram+2,4-D+dicamba
Trooper Pro (Nufarm)	= Surmount
Canter R&P (Wilbur Ellis)	= Olympus (pasture)

New products/formulations:

- **thiensulfuron** (Bayer) is new to ND but has been registered in corn for 2-3 years. It has an ALS (2) inhibitor mode of action and a member of the "SACT" herbicide family similar to Everest 2.0 (flucarbazone), and Olympus propoxycarbazone). Thiencazabazone controls annual grasses and some broadleaf weeds but has a residue which will require an 18 month rotation restriction to most crops. Two POST products will be introduced into ND: Huskie Complete in wheat (Registration Pending) and Capreno in corn.

- **Alion** (indaziflam) from Bayer is a new active ingredient with a novel mode of action called cellulose inhibitor (29). It is a PRE herbicide and registered only in shelterbelts/tree plantings for residual grass and broadleaf weed control. See page 64 for more information.

- **Pyroxasulfone** - (Kumiai) - Registration in corn and soybean possible in 2012 but may not be registered in time for spring use. Pyroxasulfone has the same mode of action as acetanilides (15) (Dual, Harness/Surpass, Outlook) but use rates are 3 to 8 times lower and gives longer residual control than acetanilide herbicides. It is soil applied and controls annual grasses but also many broadleaf weeds. It has very low water solubility and requires ample rainfall for activation. Pyroxasulfone will have 18 month rotation restriction to all crops except labeled crops. Kumiai owns the active ingredient and has allowed marketing rights to three other chemical companies.

- **Anthem** (FMC) = pyroxasulfone + Cadet (fluthiacet)
- **Fierce** (Valent) = pyroxasulfone + Valor
- **Zidua** (BASF) = pyroxasulfone.

HERBICIDE UPDATE:

Small Grains herbicides:

- **Axial Star** (Syngenta) = pinoxaden + safener + fluroxypyr (Starane). Grass and some broadleaf weeds + kochia

- **Huskie Complete** (Syngenta) = Huskie + thiencazabazone (see above).

- **Olympus** (Bayer) = propoxycarbazone, PRE- reg. pending. Spring wheat = 0.2 oz/A, winter wheat = 0.6 oz/A, not for durum or barley for control of bromes, wild oat, and mustard species.

- **Osprey** (Bayer) = mesosulfuron, same active ingredient as

Silverado, winter wheat only, for bromes, wild oat, Persian darnel.

Corn herbicides:

- **Capreno** (Bayer) = Laudis + thiencazabazone - see left column.
- **Anthem** (FMC) = see pyroxasulfone in left column.
- **Fierce** (Valent) = see pyroxasulfone in left column.
- **Zidua** (BASF) = see pyroxasulfone in left column.

Soybean herbicides:

- **Express SG** (Dupont) = Apply PRE with glyphosate for weed burndown, including dandelion. Crop planting delay required.

Rate	Interval prior to planting
0.25 oz SG	Soybean = 1 day
0.3 to 0.5 oz SG	Soybean = 7 days
0.25 to 0.5 oz SG	Clearfield sunflower = 0 days

- **BroadAxe** (FMC) = Dual Magnum + Spartan
- **Clarity** (BASF) = Harvest aid for soybean (not new registration).
- **Anthem** (FMC) = see pyroxasulfone in left column.
- **Fierce** (Valent) = see pyroxasulfone in left column.
- **Zidua** (BASF) = see pyroxasulfone in left column.

Herbicide Resistant Soybean herbicides:

- **Flexstar GT 3.5** (Syngenta) = Glyphosate + Flexstar / RR soy. Rate restricted by geographic area - up to 2.68 pt/A E of Hwy 281. 2.68 pt = 12.8 fl oz Flexstar + 2 pt glyphosate (3 lb/gal).

- **Ignite 280** (Bayer) = Liberty Link soybean. 2 applications recommended. 1st app = 22 to 36 fl oz/A, 2nd = up to 29 fl oz/A.

Dry bean herbicides:

- **Permit** (Gowan) = POST application registered.
- **Sharpen** (BASF) = Preharvest application. Export residues acceptance expected by most countries in 2012.

Field pea / Chickpea herbicides:

- **Sharpen** (BASF) - 1-2 fl oz/A registered.

Sunflower herbicides:

- **BroadAxe** (FMC) = Dual Magnum + Spartan
- **Clearfield snfl** (BASF) = Hybrids with greater Imi tolerance expected - Clearfield Plus (CLHA). Use rates up to 6 fl oz/A.

Flax herbicides:

- **Spartan** (FMC) = registered for use in ND and MN. Registration of Spartan Charge expected in the future.

Potato herbicides:

- **Sonalan** (Dow) = use pattern similar to Treflan (PRE).
- **Reflex** (Syngenta) = PRE at rates up to 0.75 pt/A E of Hwy 281.

Other:

- **Valor** (Valent) = registration pending for harvest aid in wheat, flax, lentil, sunflower, safflower, and other crops - not for canola or sugarbeet.

- **Gramoxone SL** (Syngenta) = will replace Gramoxone Inteon. Same formulation - use same rates and applications.

- **Glyphosate** - (Text - pages 69-71) Updated / new information.

- **Spray Adjuvants** - (Text - pages 72-73) Revised and updated.

- **Wick application** - (Text - pages 79) Added in response to "desperation" weed control situations.

- **Herbicide Resistant Weeds** - (Text + Table - pages 102-105)
Revised and updated with new glyphosate resistant biotypes.

Herbicide Compendium (Pages 122-129) - added several new generic names, formulations, and mode of action in superscript.

Weed of the Year - (Page 133) Waterhemp - biology, herbicide resistance, and control (or lack of) information.

Herbicide labels - Many herbicide labels now include specific language on spray quality and drift prevention, including mandatory droplet size (fine droplets are restricted), buffer distance, and application information.

Possible Section 18 or Section 3 (Fed) exemptions:

Harmony on Safflower

New Active Ingredients and Technology:

Emerging New Active ingredients:	<u>Launch</u>
Aminocyclopyrachlor DuPont Pasture/range	2011-13
Perspective (aminocyclopyrachlor + chlorsulfuron (Glean)	
Plainview (aminocyclopyrachlor + residual SUs)	
Streamline (aminocyclopyrachlor + residual Sus)	
Viewpoint (aminocyclopyrachlor + residual SUs)	

Emerging Weed Management Traits:	<u>Launch</u>
Enlist Weed Control System Dow	
DHT 1 technology in corn = resistance to 2,4-D/"fops"	2013-15
DHT 2 technology in soybean = resistance to 2,4-D, MCPA, fluroxypyr, and triclopyr.	2013-15

Enlist Duo herbicide = 2,4-D-choline salt = quaternary NH₄ salt
Colex-D Technology = the technology package in Enlist Duo and comprised of 2,4-D-choline. Also includes reduced herbicide volatility, minimized potential for drift, decreased odor, and improved handling, tank-mixing characteristics, and other factors.

Dicamba resistant soybean	Monsanto/U of NE	2014?
Glyphosate + HPPD + Ignite resistance	Bayer	2015?
Multiple crops		
Optimum GAT	DuPont Soy/Corn	2014/?

IR-4 Residue Studies to be Conducted in 2012:

Entomolgy = flonicamid on pea
Weed Science = metribuzin on potato, rimsulfuron on pasture grasses (seed).
Nematicide = fluensulfone on potato

Possible Future IR-4 Studies:

Spartan (sulfentrazone) on Safflower

Quick reference information:

1. NDSU Weed Science Home Page:
<http://www.ndsu.edu/weeds/>

2. <agdakota> list serve: Timely updates in pesticide registration and crop production information. To subscribe, send email to r.zollinger@ndsu.edu

3. U.S. registered pesticide labels:
<http://www.cdms.net/manuf/manuf.asp>

4. North Dakota Department of Ag registered pesticide database:
<http://www.kellysolutions.com/nd/>

5. SAFETY AND EMERGENCY PHONE NUMBERS:
ND Poison Control Line: 800 222-1222
ND Emergency Assistance Line: 800 472-2121
Report pesticide incident to NDDA: 701 328-2232

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NDSU Dept 7060, 205 Walster Hall
Fargo, ND 58108-6050
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Email: ndsu.pesticide@ndsu.edu
www.ndsupesticide.org

For pesticide enforcement, compliance, registration, and regulatory issues, contact the **Agriculture Chemical Division at the North Dakota Department of Agriculture**
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