

# What's New For Agronomic Weed Control

**D.D. Lingenfelter  
W. S. Curran**  
Department Of Agronomy  
Penn State

### Industry News

Aventis is the new company name from the merger of AgrEvo and Rhone Poulenc. The products and services from these two companies will now be under Aventis.

Cyanamid will be using the universal trade name Clearfield to refer to crop lines that are imidazolinone tolerant/resistant (sometimes referred to as IR or IT). The term Clearfield or CL will replace IMI. The Clearfield trade name will be used similarly to that of Roundup Ready and Liberty Link.

Syngenta is the proposed name for the merger of Novartis and Zeneca. The two companies have agreed to spin off their ag divisions from their parent companies to form a new company. The completion of this merger likely will not occur until late 2000, depending on approval from shareholders and the FTC.

• **Glyphosate products.** A number of new glyphosate containing products will be available in 2000 and during the next several years. Monsanto, the maker of Roundup, is marketing some of these new products while others are from other companies. See Table 1 for a list of glyphosate products.

### Corn Labeled

**Aim 40DF (FMC)** is labeled for early postemergence use on corn (field, seed, popcorn, and silage). The use rate for Aim is 1/3 ounces per acre. Aim is effective on small black nightshade, velvetleaf, lambsquarters, and pigweed. The price of Aim was reduced for 2000, so it could be an attractive tank mix partner to improve broadleaf control.

**Axiom AT 70DF (Bayer)** is a premix that contains the active ingredients of Axiom (flufenacet and metribuzin) and atrazine. Flufenacet is an amide-type herbicide similar in control spectrum to Dual, Harness, Surpass, Frontier, etc. Performance of Axiom on annual grasses and small seeded broadleaves has been similar to Dual, although it may need some assistance with yellow nutsedge. The addition of atrazine improves broadleaf control. The use of Axiom AT will be similar to Bicep, Harness Xtra, FulTime, and Guardsman. Use rates depend on soil texture and organic matter content, and range from 1.5 to 2.75 pounds per acre for our area.

**Bicep Magnum TR 4.59L (Novartis)** was available last year and contains s-metolachlor, atrazine, and flumetsulam (Python). It is primarily targeted at areas that have triazine-resistant lambsquarters and pigweed, but will also control the same weed

spectrum as previous Bicep products. Bicep Magnum TR can be applied preemergence to field corn from 1.6 to 2.2 quarts per acre. Follow restrictions with regard to soil insecticides, soil pH, organic matter, and planting depth to avoid crop injury.

**Broadstrike + Dual (Novartis)** will likely be discontinued within the next couple of years because of other products that fill this need. Python and Hornet will remain available.

**Celebrity Plus 70WG (BASF)** is a mixture of the active ingredients in Accent (nicosulfuron) and Distinct (dicamba + diflufenzopyr). Celebrity Plus will be applied postemergence at 4.7 ounces per acre to corn between 4 and 24 inches tall for control of many annual grasses and broadleaves plus some perennials. Nonionic surfactant and ammonium sulfate should be included in the spray mixture. Be cautious of interactions with certain OP soil-insecticide interactions. Celebrity Plus will, for all practical purposes, replace Celebrity (nicosulfuron and dicamba).

**Degree 3.8CS (Monsanto)** contains the same active ingredient as Harness but is a new encapsulated formulation of acetochlor designed to extend soil-residual control of annual grass species. (Degree may not control pigweed and lambsquarters as well as Harness due to the changed formulation). Degree will be positioned to compete with Dual II Magnum and Top Notch in the early preplant market. Monsanto claims the release of acetochlor from the encapsulation is triggered primarily by soil temperature. As the soil temperature warms up, the product becomes available to control weeds, while under cold conditions, it remains unavailable.

**Degree Xtra 4.04EC (Monsanto)** is a premix of Degree (encapsulated acetochlor) and atrazine. It will provide preemergence control of annual grasses and broadleaves.

**Dual II Magnum 7.62E and Bicep II Magnum 5.5L (Novartis)** have been available for the past two seasons, but will increase in availability, probably eventually replacing the non-Magnum formulations. The Magnum products contain the more active s-metolachlor that will be incorporated into the Dual and Bicep line of products. Dual Magnum and Bicep Magnum also contain the safening ingredient for corn. It controls the same weed spectrum as previous Dual or Bicep.

**Frontier X2 6EC (BASF)** contains dimethenamid-p, which is the more active isomer of dimethenamid (Frontier, Guardsman, and LeadOff). Since it is more active, the use rates will be lower by approximately 55 percent. For example, 28 fluid ounces of Frontier would be equivalent to about 16 fluid ounces of Frontier X2. X2

controls the same weed spectrum as Frontier, providing good control of annual grasses, some broadleaves and nutsedge. There will be limited quantities of X2 in 2000, but full conversion will occur over the next couple of years.

**Leadoff 5L (DuPont)** is a prepackage mix of dimethenamid (Frontier) and atrazine being marketed by DuPont that contains the same ratio as Guardsman herbicide from BASF. LeadOff contains 2.33 pounds per gallon of dimethenamid and 2.67 pounds per gallon of atrazine and may be soil-applied to field corn, seed corn, sweet corn, and popcorn.

**Liberty ATZ 4.3L (AgrEvo)** is a prepackaged post product that contains glufosinate (Liberty) and atrazine. It may be used in Liberty Link or glufosinate-resistant (GR) corn hybrids only. At 40 fluid ounces per acre, Liberty ATZ will provide 1 pound ai or 1 quart atrazine plus 24 fluid ounces Liberty 1.67L. Liberty in combination with atrazine controls a number of annual weedy grasses and broadleaves.

**Northstar 51.4WG (Novartis)** is a prepackage postemerge herbicide for use in corn. NorthStar is a premix of the equivalent of 0.5 ounce Beacon (active ingredient primisulfuron) and the equivalent of 4 ounces of Banvel or Clarity (Dicamba). The labeled use rate for NorthStar is 5 ounces of product per acre and it can be applied over the top to corn between 4 and 20 inches tall. Unlike Exceed and Spirit, NorthStar only has an 8-month rotation restriction for soybeans.

**Pendimax 3.3EC (Dow AgroSciences)** contains pendimethalin, the same active ingredient in Prowl. Its label and uses are very similar to that of Prowl.

**Readymaster ATZ 4L (Monsanto)** is a premix of glyphosate and atrazine for postemergence application to Roundup Ready corn. The formulation contains about 2 pounds ai per gallon glyphosate and 2 pounds ai per gallon atrazine. Use rates will range from 1.5 to 2 quarts per acre. Expect other ReadyMaster products containing Harness in the upcoming years for use in Roundup Ready corn.

### Pending

**Balance 75WDG (Rhone Poulenc)** is not yet labeled east of Ohio. EPA and the state department of agriculture are still reviewing this product for use in Pennsylvania and other areas of the Northeast.

### Soybean Labeled

**Authority 75DF (DuPont)** contains the single active ingredient sulfentrazone. Authority is applied preemergence at 4 to 5.3 ounces per acre and provides control of common broadleaves including nightshade. To broaden the weed



control spectrum, tank-mix with other pre products or apply a planned post herbicide such as Classic, Synchrony, or Roundup (on respective herbicide resistant varieties only).

**Backdraft (Cyanamid)** is a premix of Scepter (imazaquin) and glyphosate (Roundup Ultra) for use in Roundup Ready soybeans. This herbicide is intended for early post applications with the glyphosate providing control of existing weeds and the Scepter providing residual control of weeds emerging after application.

**Boundary 7.8EC (Novartis)** is a premix of s-metolachlor and metribuzin. It will mostly be applied preemergence at the 1.25-1.5 pint per acre rate followed by Roundup Ultra or other glyphosate product in Roundup Ready soybeans. The 1.5 pint rate equals 1.24 pint Dual II Magnum and 6 ounces of Sencor. This program could allow a wider application window for Roundup following the Pre program. Boundary will eventually replace Turbo (Dual + Sencor).

**Domain 60DF (Bayer)** herbicide premix is similar to Axiom but is a different ratio. Domain is a 1:1.5 combination of 24 percent flufenacet and 36 percent metribuzin. Axiom 68DF is a 4:1 ratio of flufenacet and metribuzin. Flufenacet is an amide-type herbicide similar in

control spectrum to Dual and Frontier, etc. Domain will be mostly used as a preemergence herbicide in a planned program in Roundup Ready soybeans to allow a wider application window for Roundup or other glyphosate products. The current maximum use rate for soybean is 9-16 ounces per acre.

**Extreme (Cyanamid)** is a premix of Pursuit (imazethapyr) and glyphosate (Roundup Ultra) for use in Roundup Ready soybeans. This herbicide is intended for early post applications with the glyphosate providing control of existing weeds and the Pursuit providing residual weed control. The recommended use rate will be equivalent to 24 fluid ounces of Roundup and 1.44 ounces of Pursuit DG.

**Glyphomax 4L and Glyphomax Plus 4L (Dow AgroSciences)** are basically the same glyphosate products as Roundup and Roundup Ultra, respectively. Dow will recommend tank-mixing FirstRate with one of the Glyphomax products for use in Roundup Ready soybeans. At this time, this line of glyphosate products cannot be applied to Roundup Ready corn.

**Pendimax 3.3EC (Dow AgroSciences)** contains pendimethalin, the same active ingredient in Prowl. Its label and uses are very similar to that of Prowl.

Table 1. GLYPHOSATE AND GLYPHOSATE-TYPE PRODUCTS

Product	Manufacturer	Active Ingredient/ Acid Equivalent (adjuvants in formulation)	Apply to Roundup Ready Crops?
Roundup Ultra	Monsanto	4 lb ai/3 lb ae (TranSorb adj.)	soybean, corn
Roundup Ultra Max	Monsanto	5 lb ai/3.7 lb ae (TranSorb adj.)	soybean, corn
Roundup Ultra DRY	Monsanto	0.714 lb ai/0.694 lb ae (TranSorb adj.)	soybean, corn
Roundup Custom	Monsanto	5.4 lb ai/4 lb ae (no surfactants)	soybean, corn(?)
Roundup Original	Monsanto	4 lb ai/3 lb ae (some adj.)	soybean, corn
Roundup Ready Master ATZ	Monsanto	2.02 lb ai (some adj.)	corn
Touchdown 5 (sulfosate)	Zeneca	5 lb ai/3.426 lb ae (adj. included)	soybean
Ranger	Monsanto	2.7 lb ai/2 lb ae (some additives)	no
Rodeo	Monsanto	5.4 lb ai/4 lb ae (no additives)	no
Glyphos	Cheminova	4 lb ai/3 lb ae (some additives)	soybean
Credit	NuFarm	4 lb ai/3 lb ae (some additives)	soybean
Gly-Flo	MicroFlo	4 lb ai/3 lb ae (some additives)	soybean
Glyphomax	Dow AgroSciences	4 lb ai/3 lb ae (some additives)	soybean
Glyphomax Plus	Dow AgroSciences	4 lb ai/3 lb ae (some additives)	soybean
Acquire	BASF	4 lb ai/3 lb ae (some additives)	soybean
Extreme (contains Pursuit)	Cyanamid	?	soybeans
Backdraft (contains Scepter)	Cyanamid	?	soybeans
Premixes w/ glyphosate	Novartis	?	soybean-2001 (?)
Honcho, Rascal, Silhouette, Rattler, Buccaneer	Mirage	4 lb ai/3 lb ae (varies; some additives)	soybean (?)