

New Herbicide for Chickpea Growers

IN BRIEF

This year, producers will have the opportunity to use Authority herbicide for broadleaf weed control in chickpea.

Despite efforts to get Authority herbicide registered last spring, final approval came too late to get the product into the hands of most chickpea producers in Saskatchewan. As a result, 2009 will be the first time most producers will be able to try some on their farm. Authority use is limited to broadleaf weed control in chickpeas in Saskatchewan only, although Nufarm is pursuing additional crops for the label and expanding use to the other Prairie provinces.

The Canadian label for Authority lists kochia, lamb's-quarters, redroot pigweed and wild buckwheat as weeds controlled. At the rates registered for use in Saskatchewan, control of wild mustard and some other key weeds does not meet expectations. As a result, Ken Sapsford and Rick Holm at the University of Saskatchewan, along with Eric Johnson at Agriculture and Agri-Food Canada (AAFC) will be assessing other broadleaf herbicide combinations that might be used with Authority to provide a wider spectrum of broadleaf weed control.

Authority is a soil active herbicide containing the active ingredient sulfentrazone. It is applied to the soil surface and needs either one-half to one inch of rain, or a shallow incorporation within seven to 10 days of application to ensure that it is positioned in the

rooting zone of the weeds. In either case, adequate soil moisture is needed for activation of the herbicide. Weed seedlings rooting into the treated layer take the herbicide in through their roots and circulate the herbicide through the plant.

Sulfentrazone is a Group 14 herbicide that eventually results in the production of a chemical like hydrogen peroxide inside the

Authority use is limited to broadleaf weed control in chickpeas in Saskatchewan only.

plant cells. The buildup of this compound rapidly destroys the cell membranes from inside the plant. Loss of membrane function allows the cell contents to leak out and the plant dries out and dies.

The most obvious symptom of Group 14 herbicides is the death and drying out of plant tissues. Because Authority is a soil applied herbicide and the plant draws the herbicide in through the roots, there may also be some additional symptoms such as the yellowing or

Note

There is an error in the "Weed Control in Other Pulse Crops" chart on page 42 of the *2009 Guide to Crop Protection* published by Saskatchewan Ministry of Agriculture. The mark in the chart indicates registered crops should be under the chickpea column instead of the dry bean column.

Research has been done on Authority in dry bean that indicates there is a significant risk of unacceptable injury, but significant yield loss was not seen at the rates registered for use on chickpea in Saskatchewan.

Please note that use of Authority on any crop other than chickpea in Saskatchewan is a breach of the federal Pest Control Products Act and could result in penalties and/or confiscation of a crop.



Authority was applied to the right side of the field for a research trial last summer at Scott Research Farm.


bleaching of tissues prior to their death. There are several other herbicides in this group present in Western Canada such as Reflex from Syngenta, and Aim/Cleanstart from FMC, and more products coming to the market such as Blazer from UPI, Kixor from BASF, and Flumioxazin from Engage Agro.

Because Authority is a soil active herbicide, its fate in the environment is very important. Authority has relatively high solubility in water and a relatively long soil life compared to many other herbicides. During the evaluation of Authority, officials at the Pest Management Regulatory Agency (PMRA) expressed concern that the compound's relatively long life and water solubility could result in a greater risk of showing up in wells that draw from shallow ground water. FMC is submitting additional data, including ground-water monitoring studies to PMRA in an attempt to ease concerns. It is important to follow soil type restrictions carefully.

Authority may only be used on soils from one to six per cent soil organic matter with a couple of exceptions. Soil organic matter attracts the compound, thereby holding it in the upper layers of soil. Authority should not be used in coarse textured soils with high proportions of sand as a component or in soils with a pH of 7.8 or more because the product could move quickly into deeper soil layers. In the case of soil types with high levels of clay,

organic matter levels should be greater than 1.5 per cent for safe use.

Because of the long soil life associated with Authority use, recropping options and crop rotations should also be considered. Fields that had Authority applied may be cropped to alfalfa, field corn, sunflower, and spring wheat in the spring of the following year and winter wheat in the fall the year following application. In the second season, canola (all varieties), sweet corn, and sorghum may be planted, but the seeding of all other crops must wait until the third season following application of Authority and must be tested in a bioassay to show that tolerance is adequate for planting. The planting of herbicide tolerant canola will not shorten the replanting interval. If drought conditions are experienced during the waiting period for a particular crop, an additional year must be added to the planting delay. Lentils are particularly sensitive to Authority residues and drift.

For more information about Authority, check out the *2009 Guide to Crop Protection* online at www.agriculture.gov.sk.ca or pick one up at your local farm retail outlet. You can also call the Agriculture Knowledge Centre at 1-866-457-2377 or the NuFarm Agriculture line at 1-800-868-5444. 

Clark Brenzil is the Weed Control Specialist with the Saskatchewan Ministry of Agriculture. He can be reached at clark.brenzil@gov.sk.ca or 306-787-4673.