

Combating triazine-resistant weeds

CHICAGO — Rotating crops and herbicide families is the key to stopping the buildup and spread of triazine-resistant weeds, according to University of Maryland Extension weed scientist, Dr. Ron Ritter.

Researchers worldwide have

identified as many as 40 weed species that have developed a resistance to the triazine herbicides. More than 20 resistant species are found in the United States and Canada.

Velvetleaf is the most recent addition to the list. According to

Dr. Ritter, triazine-resistant velvetleaf has been confirmed in Maryland.

While resistance has been a problem for several years in the Northeast and Mid-Atlantic states, the problem is starting to appear throughout the Midwest.

University of Wisconsin agronomist, Dr. Jerry Doll, reports the triazine-resistant common lambsquarters, which had been previously identified in 12 Wisconsin counties, has now spread into Portage, Outagamie, Waukesha, Langlade, Clark and Calumet Counties. The state's first infestation of triazine-resistant redroot pigweed was confirmed in Brown County this year.

According to Dr. Ellery Knake, Extension weed scientist at the University of Illinois, development of triazine-resistance has not generally been a serious problem in Illinois. About 11 million acres of corn and nine million acres of soybeans are commonly grown in sequence, he says. Use of a variety of herbicides and rotating both crops and herbicides have helped to avoid the problem. However, Dr. Knake advises farmers who grow continuous corn and do not rotate herbicides to be on the alert.

Resistant pigweed has also spread into Shelby County, Ky. Dr. Mike Barrett, at the University of Kentucky, says pigweed is the first weed confirmed as resistant in the state.

In Iowa, triazine-resistant kochia has been identified in non-cropland in Pottawatomie County, near Council Bluffs. Dr. Richard Fawcett, an independent crop consultant in Huxley, says several other non-crop areas in western Iowa also look suspicious, but no other cases of triazine-resistance have been documented.

Triazine-resistant kochia is also found in 10 counties in central and southwestern Nebraska.

Triazine-resistant lambsquarters has been found for the past three years in Fillmore, Goodhue and Olmsted Counties in Minnesota.

Until recently, triazine resistance was confined to areas where corn was grown continuously and where triazine

herbicides were used year-after-year. Repeated use of triazines can cause a shift among varieties, or "biotypes", of weeds. Eventually, the resistant biotypes become dominant.

Dr. Ritter says resistant weeds often appear in end rows and along the edges of a field. From there they spread to other areas of the field or farm by harvest equipment, manure spreading and seed reproduction.

Dr. Ritter recommends farmers clean machinery between fields to avoid spreading seed and avoid spreading contaminated manure in clean fields.

"Farmers should also rotate crops and herbicides," he says. "Herbicides from the same family shouldn't be used every year. Escaped weeds should be controlled with cultivation and herbicides with different modes of action than the triazines."

As a total weed control program, Dr. Ritter recommends a pre-emergence application of an acetanilide-type herbicide, such as Lasso or Dual, for control of grasses and suppression of resistant pigweed, followed by 1 pint of Banvel herbicide for control of triazine-resistant broadleaf weeds, as well as other annual broadleaves and perennial seedlings.

Rotating triazines won't work. Once a biotype develops a resistance to one triazine, it is resistant to all of them. The triazine herbicides include: atrazine (AAtrex, AtraneX, Griffex) simazine (Princep, Simanex), cyanazine (Bladex), and the asymmetrical triazine metribuzin (Sencor, Lexone).

Recent research also shows that triazine-resistant weeds also develop a resistance to the other photosynthesis-blocking herbicides, such as the substituted ureas (Lorox) and uracils (Hyvar).



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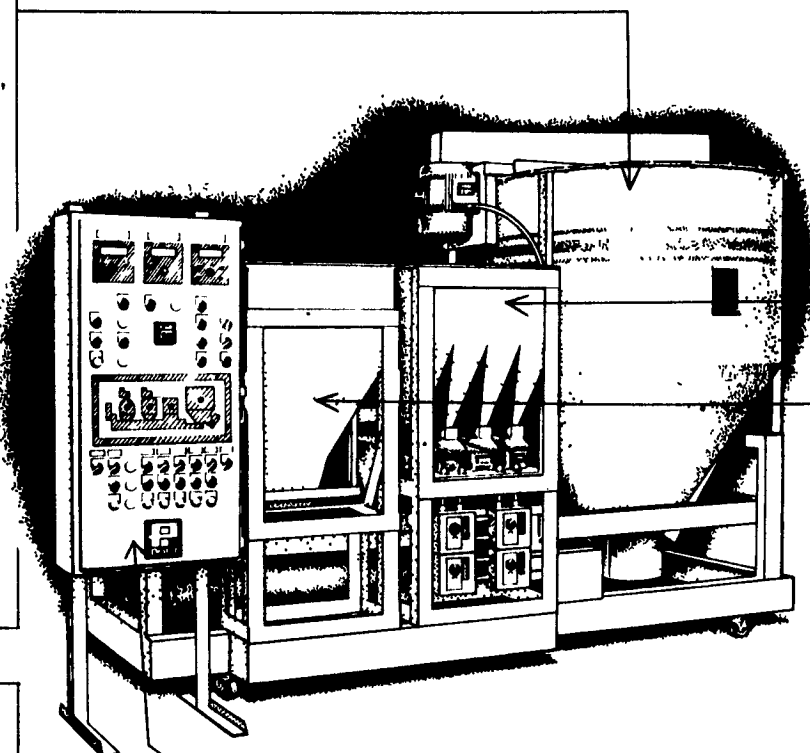
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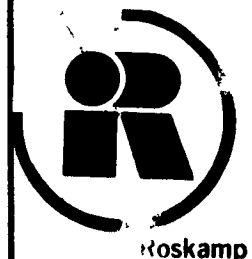
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