

Triazine-Resistant Weeds Becoming #1 Pest

Many farmers remember when a pound of atrazine herbicide controlled all the weeds in a corn field.

Those days are gone. A new group of super weeds, resistant to triazine herbicides, has emerged as the No. 1 pest problem facing farmers today.

Over the past decade, triazine-resistant weeds have spread from corn fields throughout the Great Lake and mid-Atlantic states. The broadleaf weeds lambsquarters and pigweed are most prevalent but at least one case of triazine-resistant velvetleaf is confirmed in Maryland.

Documented infestations of triazine-resistant weeds cover an estimated 123,500 crop acres in Maryland alone. Resistant lambsquarters and/or pigweed also are found in 20 counties of New York and at least 20 counties of Pennsylvania. All counties of Delaware

and 41 Virginia counties have recorded triazine-resistant broadleaf weeds.

Triazine-resistant weeds are probably present, without being documented, on many more farms, says Russ Hahn, Ph. D., Extension weed scientist, Cornell University.

"Farmers must accept the fact that their weed control practices have to change in order to control triazine-resistant weeds," he says. "And once they implement a program that works, farmers must continue using the new program for several years."

The triazine family includes atrazine (AAtrex®, Atranex®, Griffex®), simazine (Princep®, Simanex®), cyanazine (Bladex®) and metribuzine (Sencor®, Lexone®).

"Prevention is the key to stopping the spread of triazine-

resistant weeds," says Ron Ritter, Ph.D., University of Maryland, Extension weed scientist. "Triazine herbicides shouldn't be used year after year and weed escapes should be controlled through cultivation and/or herbicides having a different mode of action than the triazines."

Resistance to triazine herbicides develops through the genetic process of natural selection, explains Sandoz product development specialist William O'Neal.

"Triazine-resistant weed biotypes have always been present," says O'Neal. "They just didn't become numerous until herbicides killed off susceptible, non-resistant biotypes. Now weed species that were once susceptible to triazines at labeled rates can withstand 10 to 30 times recommended rates."

"Normally, triazine herbicides kill weeds by bonding to the plant's chloroplast membrane and preventing photosynthesis," O'Neal explains. "In resistant weeds, a chemical change in this membrane structure alters triazine bonding, so treated plants continue to grow."

Pesticide resistance is not a new

phenomena. Many instances exist of insect and fungi developing resistance to commonly used

chemicals. Today, 43 plant species worldwide are documented as resistant to triazine herbicides.

MICROWAVE MINUTES

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- 1/2 cup whole-wheat flour
- 2 tablespoons all-purpose flour
- 1 teaspoon cinnamon
- 3 tablespoons butter or margarine

Garnish: Whipped cream (optional)

Place crust in microwave-safe 9-inch pie plate. Brush crust top edges with vanilla. Prick crust bottom and edges well. Microwave (High) 2 1/2 to 4 minutes or until surface is no longer shiny, rotating plate as necessary for even cooking. Pour cherry pie filling into crust; set aside.

Combine flours and cinnamon; cut in butter with fork or pastry blender until crumbly. Sprinkle over cherry pie filling. Microwave (High), uncovered, 6 to 8 minutes or until top is bubbly towards center. Cool completely or chill before serving. Top with whipped cream

if desired. Makes 6 to 8 servings. Each serving- 1/4 of pie: 256 calories, 3g protein, 12g fat, 36g carbohydrate, 156mg sodium, 13mg cholesterol.

Questions for Joyce?

Do you have a question about microwave cooking? Send it to Microwave Minutes, % Extra Newspaper Features, P.O. Box 6118, Rochester, MN 55903. Please include a self-addressed, stamped, business-size envelope.

Recipes in this column are tested in 600- and 650-watt microwave ovens. With an oven of different wattage output, timings may need slight adjustment.

Joyce Batcher is an independent home economist microwave specialist. She is author of "Microwave Family Favorites" and editor of "A Batch of Ideas" newsletter.

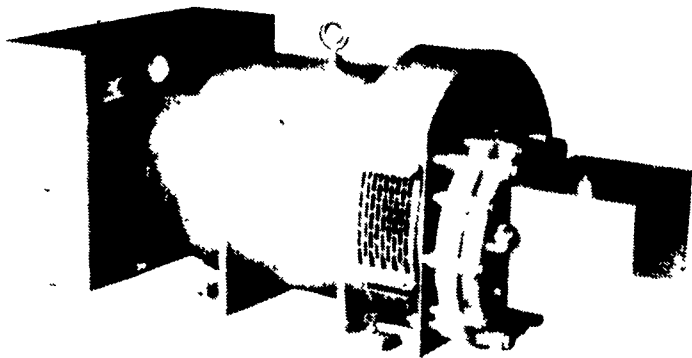
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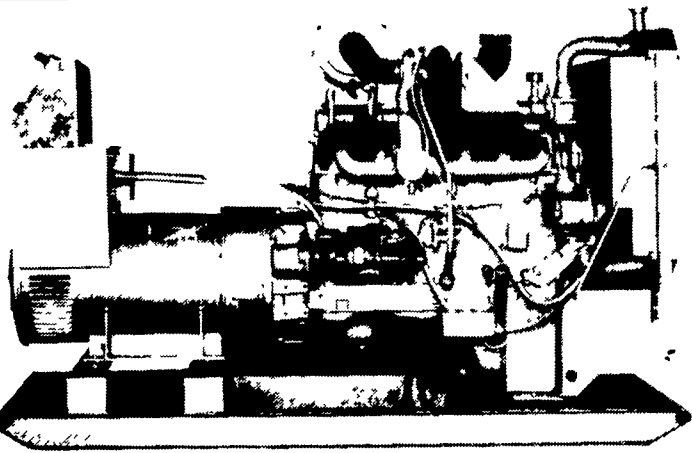


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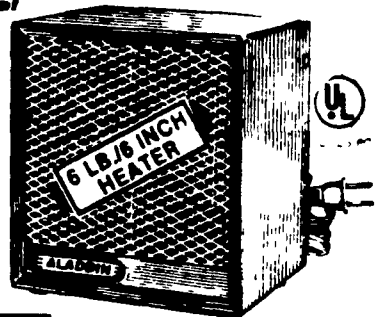
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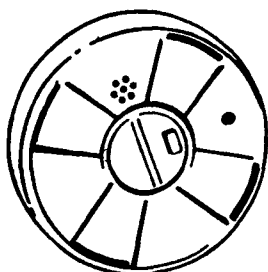
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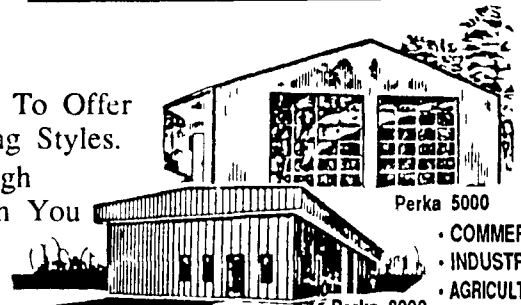
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