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2,4-D use in soybeans

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Abstract
Weed growth has increased considerably with the elevated soil temperatures and soil moisture availability. Thus, the use of a burndown treatment (see the May 4, 1998 ICM article, Burndown timing for no till fields, page 65) will be of critical importance for soybean production systems and 2,4-D is an excellent, cost-effective herbicide to use for broadleaf weed control. There are several factors to consider when determining which formulation and how much material to use.

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Weed growth has increased considerably with the elevated soil temperatures and soil moisture availability. Thus, the use of a burndown treatment (see the May 4, 1998 ICM article, Burndown timing for no till fields [1], page 65) will be of critical importance for soybean production systems and 2,4-D is an excellent, cost-effective herbicide to use for broadleaf weed control. There are several factors to consider when determining which formulation and how much material to use.

Although both amine and ester formulations of 2,4-D are registered for use prior to soybean planting, **Iowa State University does not recommend the use of amines**. Amine formulations of 2,4-D are highly water soluble when compared with ester formulations and root uptake of the amine is more likely. Although this may improve residual weed control, it increases the potential for soybean injury and stand reduction. Ester formulations of 2,4-D more readily penetrate through the waxy cuticle of leaves and thus may provide better weed control when temperatures are relatively low. However, esters can volatilize, move off-target, and cause injury to sensitive plants. The selection of a low volatile ester lessens the possibility of off-target movement. Iowa State University recommends the use of low volatile ester formulations of 2,4-D for preplant application in reduced tillage soybean weed control systems.

The selection of rate is another consideration. When weeds are small, or if temperatures are relatively warm, the use of 1 pint of a 4 pound per gallon formulation of 2,4-D (0.125 pounds of active ingredient) may provide sufficient weed control. However, if weeds are larger or if dandelions are a problem, 2 pints of product (0.25 pounds of active ingredient) is recommended.

The 2,4-D rate and formulation dictate the delay between herbicide application and soybean planting. When 1 pint of 2,4-D ester is applied, soybean planting should be delayed 7 days. When 2 pints is applied, delay planting a minimum of 30 days. If an amine formulation of 2,4-D is used, delay soybean planting a minimum of 15 days for a 1-pint application and 30 days for a 2-pint application.

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