Weeds in Onions and Garlic

selective sprays effective in control of broadleaf weeds in Imperial Valley field trials

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Effective control of broadleaf weeds in onion and garlic fields with cyanate sprays was demonstrated by initial trials in the Imperial Valley last fall.

These experiments show that proper application of this chemical at an early stage of weed growth may reduce the amount of hand weeding necessary by as much as 90%—depending upon weed population in the field.

The postemergence cyanate spray application will kill most annual broadleaf weeds when small without harm to the onions if used in the proper concentration. Care must be taken that the solution is not too strong as the upper limit of tolerance of the onions is not very high. On contact with the soil, potassium cyanate breaks down rapidly to form potassium bicarbonate and ammonia. Both compounds are fertilizer materials so there is no injurious residual effect.

Experimental plot in onion field in Imperial Valley showing control of weeds with potassium cyanate spray. Check bed is on the left.

Applications at the rate of 60 to 80 gallons an acre and solution concentrations ranging from 0.9% to 3.6% of potassium cyanate with and without a wetting agent were used in the experiments. Most of the broadleaf weeds were effectively killed, although watergrass was not controlled by the sprays. The influence of the weed killer on the onions themselves is shown in the accompanying table.

The spray should be applied when the oldest broadleaf weeds present have only two true leaves. Weeds make very rapid growth after come-up, which means that spraying should start within only a few days after a crop of weeds emerge.

The spray application may be repeated as a new crop of weeds appears. The degree of control of the weed population with the cyanate weed killer drops rapidly as the age of the weed population increases.

The cyanate spray should be applied when the weeds are dry, and should not be used when the weeds are wet with dew or rain. The application should be followed by several hours of dry weather.

Proper Concentration

The cyanate spray should be used at two different concentrations—depending upon the size of the onions and garlic.

The recommended application for small seedling onions and garlic is five pounds an acre of cyanate dissolved in 60 gallons of water—1% cyanate spray.

For onions and garlic six inches tall or larger, a solution of 10 pounds of cyanate dissolved in 60 gallons of water—2% cyanate spray—is recommended.

Garlic appears to be more tolerant than onions of higher concentrations of cyanate spray. The addition of a wetting agent to the spray material reduces the selectivity of the cyanate spray and increases the amount of injury to onions. No wetting agent should be used.

The amount of 1% and 2% cyanate spray solution required for each acre will depend on the efficiency of the spray equipment being used and the number of weeds present in the field. In fields where the weeds are dense, greater control is attained by increasing the gallonage for each acre. It is necessary only to thoroughly wet the small weeds and this should not require more than 60 gallons an acre when spraying the entire area between rows. If only a band in the row receives treatment, proportionately less spray solution should be used for each acre.

Equipment commonly used by growers in spraying carrots and other vegetable crops can be adjusted to make desired applications of cyanate spray. Fan-type nozzles are recommended for spraying seedling onions or garlic and for large onions and garlic. When spraying weeds in large onions or garlic it is important that the nozzles be lower than the top of the onions or garlic. This is necessary to get complete coverage of small weeds in the rows and to avoid possible tipburning of the crop. Low pressure sprays—25 to 50 pounds a square inch—have been found most satisfactory. The spray solution should always be freshly prepared as it deteriorates on standing.

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The Effect of Potassium Cyanate Sprays Applied to Onions When 2 to 3 Inches in Height.

Potassium cyanate pounds per acre	Gallons of water per acre	% solution	Wetting agent used	Injury to onions
6	80	0.9	No	No injury
12	80	1.8	No	Slight burn
6	60	1.8	Yes	Burn (set back in growth)
6	60	1.8	No	Slight burn
12	60	2.4	No	Burn (set back in growth)
12	60	2.4	Yes	Severe burn
18	60	3.6	Yes	Severe burn and kill