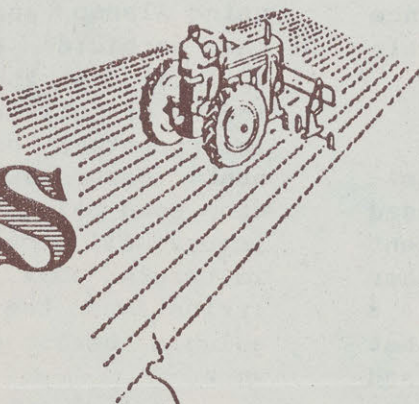


ROW CROPS



COOPERATIVE EXTENSION

UNIVERSITY OF CALIFORNIA

COLUSA COUNTY

From:

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Field & Row Crops Farm Advisor

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VINESEED HERBICIDES

There has been increased interest in using preplant broadleaf herbicides for early-season weed control in many of the cucurbit seed crops (vineseeds) grown locally. As the margin between a vine-seed growers profit or loss narrows, the industry must constantly evaluate potential new or existing cultural practices to help maximize crop yields and minimize production costs. By incorporating a preplant weed control program into their operations, many vineseed growers could realize both of these objectives.

The vineseed industry is fortunate to have the herbicide Poast® available for post-emergence grass control. This product does a very effective job of grass

control, provided that adequate soil moisture is present when treated. Treflan is also registered for post-emergence broadleaf and grass weed control in vineseeds, and can be helpful for mid-season weed control. However, this product is not currently registered in California for preplant applications to vineseeds.

Until recently, most early-season weed control in vineseed fields was obtained by cultivations and hoeing crews. These operations can add significantly to production costs and are areas of potential savings if less expensive options are available. One potential alternative, in this regard, is the use of a registered preplant herbicide. There are currently at least two products on

the market that are labeled for some vine-seed crops and may fit into local weed management strategies. The balance of this article will discuss the herbicides Amiben® and Alanap®.

Chloramben (Amiben® - Amchem Products) - registered for use on direct-seeded squash and pumpkin. Note that Amiben® is not registered for use on the other vine-seed crops grown locally. This is a preplant or preemergence herbicide that will only control emerging weeds and will not effect established weeds. Some of the weeds listed on the label as being controlled include: barnyardgrass, crabgrass, lambsquarter, mustard, black nightshade, pigweeds, purslane and velvetleaf. Amiben® is available as either a granular or a dry soluble formulation. The granular product is applied to the soil surface and moved into the weed seed zone with a sprinkler irrigation. The soluble formulation should be incorporated into the top inch of soil and requires moisture for activation. Amiben® moves readily with water, so care should be taken with sprinkler irrigations to not move the herbicide below the weed seed zone. The product supplies several weeks of weed control. I have not personally worked with Amiben®, but I am aware it is being used by some local growers. It will be included in a vine-seed weed control field test program this season.

Naptalam (Alanap® - Uniroyal Chemical Co.) - registered for use on cantaloupe, cucumber, muskmelon and watermelon. Note that Alanap® is not registered for use on squash or pumpkin crops in California. Discussions with the manufacturer have disclosed that the possibility of crop injury on these two cucurbit crops is higher than the labeled cucurbit crops.

This is a preemergence herbicide which will not control existing weeds. Weeds listed as controlled by Alanap® include: lambsquarter, purslane, velvetleaf, field bindweed, groundcherry, shepherds

purse and pigweeds. Alanap® is sold as a liquid formulation. One of the keys to using Alanap® seems to be incorporating the herbicide in the proper manner. Uniform distribution in the top 1-1 1/2 inches of soil is important, and power incorporators do the best job of placement. Care must be taken to plant the crop seed below the Alanap® band, as crop injury will occur if the seed germinates in treated soil. Also, avoid sprinkler irrigations that would move this water soluble herbicide into the crop-seed zone.

Alanap® is also registered to use with Prefar®, as a preplant combination that will control a wider spectrum of weeds. A potential problem with using Prefar® is a long plant-back restriction with not many local crops fitting into a crop rotation program.

Alanap® was included in several vine-seed herbicide field tests conducted by U.C. in Colusa County last year. Populations of jimsonweed, black nightshade, groundcherry and pigweed in plots receiving a preplant application of Alanap® were considerably less than in untreated plots. It was felt that even better weed control would have been obtained in these tests if the herbicides had been incorporated differently. The herbicides were sprayed on the soil surface (two 30 inch beds) and gangs of lillistons were used twice to form the final sixty inch bed. The uniformity of the soil/herbicide mix obtained with this incorporation is inferior to that obtained with a power incorporator. We will be conducting additional tests this year, using power incorporators, to evaluate Alanap®, Amiben® and several non-registered preplant herbicides.

A hypothetical total season weed control program for vine-seeds could be as follows: preplant application of Alanap® or Amiben®, depending on the crop being grown; a lay-by application of Treflan® and a post-emergence application of Poast®. Assuming all of these herbicides would be needed, the cost would be about \$40 per acre. All materials would

be applied as two 12 inch bands per 60 inch bed, at rates appropriate for clay soils. This figure compares favorably with costs associated with hand-hoeing crews and if improved crop growth due to less early-season weed competition is considered, added advantages may be obtained.

DRY BEAN PLANTING DATES

With all of the beautiful summer-like weather we have had this year, bean growers are undoubtedly anxious to start planting. While that may be tempting, it would be prudent to park the planter and go fishing! University of California studies conducted over twenty-five years ago showed that the optimum time for planting double-cropped dry beans in the lower Sacramento Valley is June 15-July 15. These guidelines are as true today as they were then. It's easy to see why you don't want to plant later than July 15: beans require a certain amount of time to grow, develop and dry down before the winter rains and plantings later than July 15 run the risk of being rained on.. But why not before June 15? Why not May 15, or whenever the soil/weather conditions are favorable?

The answer to this question appears to be associated with the maximum air temperatures during flower bloom and pod fill. If temperatures during this critical period are too high, the flowers drop or the seeds do not properly size. Kidney bean plants have a determinate growth habit, which results in them producing many (most) of their flowers during a brief time period. If conditions are unfavorable for pollination and pod set during this brief period, flowers drop and seed yields are reduced. Plantings that are made before June 15 in the lower Sacramento Valley have a greater likelihood of being exposed to high temperatures during flower bloom and seed sizing than plantings made between June 15-July 15.

It takes approximately 35-40 days from emergence until first bloom for light

red kidney beans planted during the summer months in the lower Sacramento Valley. To illustrate this point, let's take two hypothetical planting dates of June 1 and July 1. The beans planted on June 1 will flower on about July 10 and mature in mid-late August. Those planted on July 1 will flower on about August 10 and mature in mid-late September. The average maximum air temperature in Colusa on July 10 is 96°F, compared to an average of 92°F on August 10 (1983-1986). The temperatures during seed sizing show a similar trend of decreasing as the summer progresses.

Some other interesting observations come from several years of field tests conducted during the late 1950's by U.C.D. Agronomy Professor Francis Smith: the first flower blooms are more important for optimum yields than later blooms; high temperatures reduced both the number of pods set and the number of seed per pod; if plants were in bloom on days with high temperatures, there was a high flower mortality and fewer beans were set per pod; and yield can be more accurately predicted from the number of pods set, as opposed to the number of seeds per pod.

NEW PUBLICATIONS/COMING EVENTS

'Weed Control in Dry Beans', U.C. leaflet 21430, written by Extension Specialist Larry Mitich and farm advisors from many of the bean producing areas of California. A good overview of weed control strategies, including herbicides. Price - \$1.00, through your local Cooperative Extension Office.

'MARKETING CALIFORNIA SPECIALTY CROPS: WORLDWIDE COMPETITION AND CONSTRAINTS' - a symposium. June 1-2, Sacramento Hilton hotel. Contact Ag. Issues Center, U.C.D., for registration details (916) 752-2320. Topics include: Innovation, New Products/New Markets; Policies and Institutions; Impacts on Trade; Competitiveness at Home and Abroad; People, Income, and Lifestyles; Demand Factors.

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Co-operative Extension Work in Agriculture and Home Economics, U.S. Department of Agriculture, University of California and Colusa County co-operating

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