

Competitive Agricultural Systems in a Global Economy

Weed Management Techniques for Vegetable Crops

Issue

Vegetable crops and newly introduced crops in Arizona have very limited means of reducing weed infestations from the time of planting until harvest. Spinach is grown on about 2,000 acres in Arizona and during the fall through spring seasons. Typical winter annual weeds such as London rocket, cheeseweed, shepherds-purse, goosefoot, and grasses generally infest spinach fields from the time the crop begins to emerge. The weeds compete with the crop for sunlight, water, and nutrients. Mechanical cultivation with tractors may remove weeds in the furrow between the rows of spinach but expensive hand-hoeing is still required to remove the weeds growing in the rows with the spinach. Without any available herbicide, growers have spent more than \$1,500 per acre to have crews hand-hoe the weeds.

Funding

Various sources of unsolicited gift funds

Contact

Kai Umeda, Area Extension Agent, Vegetable Crops
University of Arizona Cooperative Extension
Maricopa County
4341 E. Broadway
Phoenix, AZ 85040
Tel: 602-470-8086
Fax: 602-470-8092
E-mail: kumeda@ag.arizona.edu

Garbanzo beans have been increasing in acreage in Central Arizona in the past few years as a rotational crop that is beneficially grown as an alternative to small grains and offers new marketing opportunities for Arizona growers. During the long winter through spring growing season, weeds become a problem especially as the beans mature. No available herbicides provide seasonal weed control for garbanzo bean production.

What has been done?

The University of Arizona Cooperative Extension Maricopa County commercial vegetable crops program has an on-going project to evaluate new techniques and herbicides for weed control in vegetable crops. Initiated in 1994, the project continually evaluates the efficacy and crop safety of newly introduced herbicides for potential use in lettuce, cole crops, melons,

onions, and other crops that may be grown in rotation with vegetables in the desert. Results from the Cooperative Extension program's field experiments identified effective and safe herbicides for use in spinach and garbanzo beans that are grown in Arizona. Spinach growers through the efforts of Western Growers Association successfully secured an emergency exemption for the use of metolachlor (Dual[®] and Dual Magnum[®] herbicides) in 1998 and 1999. At the end of 1999, garbanzo bean growers successfully petitioned the manufacturer to request and obtain a special local need registration for oxyfluorfen (Goal[®] herbicide).

Impact

Spinach growers now have a more economical tool to assure crop stand establishment with fewer weeds. The exemption for the use of Dual herbicide does not offer complete weed control but hand-hoeing costs were reduced from \$1,500 to \$500 for one grower. Goal herbicide compliments other herbicides that are used and provides expanded control of a wider range of weed species that typically infest garbanzo beans. Data from the University of Arizona Cooperative Extension Maricopa County commercial vegetable crops program supported the growers in obtaining the use of the new tools for weed management.