SMITH, DUDLEY T.[1], LEONARD P. GIANESSI[2], RICK MELNICOE[3], AND CECILIA A. GERNGROSS[1]. [1] Department of Soil and Crop Sciences, Texas A&M University, College Station, TX 77843-2474; [2] National Center for Food and Agricultural Policy, Washington, DC, and [3] University of California, Davis, CA. **Pesticide regulatory implications for the U.S. sugar beet industry**.

The 1996 Food Quality Protection Act (FQPA) mandated the U.S. Environmental Protection Agency to review over 10,000 pesticides for re-registration under new guidelines. Retention of current pesticides and availability of new products are important to sustain sugar beet profitability. Research and extension specialists were polled in each state by the National Center for Food and Agricultural Policy to compile pesticide use data on 96 crops for 1997. Findings were reconciled with manufacturer's confidential marketing data for accuracy.

Approximately 12.5 million pounds of pesticide were applied on 1.4 million acres of sugar beets. In proportion to sugar beet acreage, more pesticides were applied in California than other regions, as a result of using sulfur to control foliar diseases. The Great Plains and the Great Lakes regions used less pesticide, primarily because of using less fungicide.

If uncontrolled, weeds reduce beet tonnage by 50 to 90%. A total of 2.3 million pounds of herbicide were applied in 1997, which accounted for 18% of all pesticide use in U.S. sugar beets. The development of micro-rate postemergence herbicides has dramatically reduced the total amount of herbicide in some regions. Most micro-rate mixtures include desmedipham, phenmedipham, and triflusulfuron. One or more of these three herbicides were applied on 70% or more of the U.S. beet acreage. The outlook for weed control in sugar beets is positive, with the increased use of micro-rate technology, GPS potentials for precision applications, and transgenic technology. Transgenic sugar beet seed has been developed, where glyphosate and other herbicides could be sprayed over the top of the crop. However, commercial adoption will be delayed until consumer acceptance issues get resolved.

Fungicides made up nearly 70% of all pesticide use and totaled 8.5 million pounds in 1997. The three most common fungicides, triphenyltin hydroxide (Super Tin), mancozeb (Manzate), and maneb (Pentathlon), were applied on 34, 28, and 14% of the U.S. acreage, respectively. However, all three are listed as potential B2 carcinogens and will likely undergo special reviews under the FQPA, with uncertain future availability. Sulfur was the fourth most common fungicide, applied on 12% of the crop but made up 80% of all fungicide use due to the multiple applications, high rates and extensive use in California. About 4% of the acreage in Idaho and some Great Plains states was treated with 1,3-D (Telone) for nematode control, which totaled 627,000 pounds in 1997. 1,3-D is listed to undergo a Special Review by EPA but outcomes may hinge on the methyl bromine Special Review and availability of alternative control measures.

Nearly 1.1 million pounds of insecticide were applied in 1997, which amounted to 9% of all pesticide use. Of particular concern is the fact that eight of the nine insecticides are Priority I chemicals for review under FQPA. The main insecticide was terbufos (Counter), an organophosphate (OP), and was applied on nearly 35% of the crop and made up 47% of the total poundage. Other OP's included aldicarb (Temik), diazinon (D-Z-N), and malathion (several).

Pesticide data and trends for most U.S. crops may be found at www. ncfap.org. Profiles of pesticide use in sugar beets and other crops can be found at ipmwww.ncsu.edu/opmppiap