

Weeds Forum Report from
the 29th General Meeting of ASSBT
March 2-5, 1997

The discussion topics of the Weeds Forum focused on herbicide resistant sugar beets, their impact on weed control in sugar beets, potential for herbicide resistant weed selection, and their acceptance by sugar companies/cooperatives and growers.

Herbicide resistant sugar beets- Liberty and Roundup are the two primary herbicides that resistance is being developed for. It was mentioned that investigations have been conducted to evaluate resistance to sulfonylurea and imidazolinone herbicides. The value of resistance to these two classes of herbicides could reduce injury from herbicide carryover and drift, since some herbicides from both chemical families persist in the soil for long periods and are applied aerially as well.

Impact on weed control- Most of the group were hopeful that weed control in herbicide resistant sugar beets would be better and possibly easier than weed control in currently available sugar beets. Some members in the forum felt that none of the currently registered herbicides are effective on many of the weeds in sugar beets. Other people were more cautious in their view that herbicide resistant sugar beets were the panacea for weed control. One comment was made that timing of postemergence herbicide applications would not be as critical as in the past and thus would allow growers who had a difficult time making timely postemergence applications to be more successful. Others in the group responded that application timing would still be critical, partly because of the Liberty and Roundup use rates, and those growers who had difficulty in making timely applications would probably continue to have problems making timely applications.

A question also was presented regarding the continued use of currently registered sugar beet herbicides. Will they be available in the future? Most people felt that currently available herbicides would continue to be used, however the total amount used by sugar beet growers could decline as long as the herbicide resistant varieties were economical and agronomically equal to non-resistant varieties. Weed scientists in the forum pointed out that neither Liberty nor Roundup are effective on all weed species even though they are nonselective herbicides. In general, Roundup is more effective on grass weeds than broadleaf weeds while Liberty has been more effective on broadleaf weeds than grass weeds. Weed control studies with both herbicides will be conducted on a broader scale this year to better determine application timing and rates for the most effective weed control.

Potential for herbicide resistant weed selection- Since Liberty and Roundup are both nonselective herbicides, growers will most likely want to use only one herbicide for weed control. Weed ecologists have pointed out that repeated use of herbicides with the same mode of action and using highly effective herbicides are just two criteria that increase the potential for herbicide resistant weed selection. If Roundup and Liberty are applied three to four times per growing season, the potential for herbicide resistant weed selection is much greater than applying the herbicides one time per season. However, unlike corn and soybeans which may be grown in rotation with one another or in monoculture, sugar beets are not grown in monoculture. In areas

of the country where Roundup or Liberty resistant sugar beets may be grown in rotation with Roundup or Liberty resistant corn and soybeans, the potential for Roundup or Liberty resistant weed selection is greatly increased. In the western US, where sugar beets are less likely to be grown in rotation with corn and soybeans, the potential for resistant weed development is less. It was agreed by all at the forum that herbicide resistant weed management strategies was an important aspect of producing any crop including sugar beets.

Acceptance by growers and processors- Most of the growers and processors were eager for the development of herbicide resistant sugar beets, but they were also cautious in their optimism. As mentioned previously, the success of herbicide resistant sugar beets will partly be based on their economics and agronomic qualities compared to non-resistant varieties. Of those growers and agronomists who responded, all said they would be interested in planting at least some of their sugar beets with the herbicide resistant gene.