

Management of Volunteer Corn in Sugarbeet and Dry Bean Crops

Situation:

It is common in many regions of the U.S. (including Wyoming) for sugarbeets and dry edible beans to follow corn in the crop rotation. Corn seed that is not harvested (due to wind, mechanical issues, pests, etc.) will often emerge in the following year's sugarbeet or dry bean crop. These volunteer corn plants then compete with the sugarbeet and dry bean crops, and can significantly reduce yields. However, there is currently very little information relating to: (1) the density of volunteer corn that will cause economic levels of crop yield reduction; (2) the duration of time early in the crop season that volunteer corn can be effectively and economically controlled; and (3) the economics of herbicides compared to hand labor for removal of volunteer corn. Because there is little information available, growers dealing with volunteer corn in their sugarbeet and dry bean crops are unable to make informed decisions on how to manage their crop rotations most economically.

A series of studies has been conducted in collaboration with researchers at the University of Nebraska to determine how to most economically manage volunteer corn in sugarbeets and dry beans. It was determined that if left uncontrolled, volunteer corn at moderate densities can significantly reduce yield of both sugarbeets and dry beans. Economical options for control are available and we have determined the critical densities and critical times of removal of the volunteer corn for both crops.

Impact:

Growers will now be able to make informed decisions on when and how to manage volunteer corn in sugarbeet and dry bean crops. Moderate volunteer corn densities (1 plant per 10 square meters) that might typically go uncontrolled could potentially cause up to a 4.5% yield loss of sugarbeets, equating to \$58 per acre loss in Wyoming. By informing growers of these potential losses they can be more proactive in management of volunteer corn, and these losses can be avoided.

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