

Volunteer corn cuts soybean yield by 83 percent

WASHINGTON, D.C. — Heavy populations of volunteer corn reduced soybean yields by as much as 83 percent, but were controlled by herbicides in tests reported by Robert N. Andersen, Agricultural Research Service weed scientist.

Andersen, working with University of Minnesota researchers J. Harlan Ford and William E. Lueschen, planted corn in clumps of 10 kernels each at three spacings rates: 2, 4, and 8 feet apart in Hodgson soybeans planted in 30- or 40-inch rows.

"We used clumps because they are more typical of naturally occurring volunteer corn populations. Our infestation levels were high, but such levels can occur in patches in farm fields," Andersen says.

The 2-foot corn spacings cut yields 83 percent; the 4-foot spacings, 58 percent; and the 8-foot spacings, 31 percent. These are averages of 2-year tests at University of Minnesota experimental plots at Rosemont, Waseca, and Lamberton. The average loss of soybeans per

clump of volunteer corn on the plots with the lightest rate, 1 clump per 8 feet, with 0.32 pound.

"In other words, every 180 clumps of volunteer corn per acre will reduce the yield about 1 bushel", Andersen says.

This estimate would include only the direct reduction in seed production, he adds. There would be additional losses due to harvesting problems caused by the corn.

The researchers were also comparing the two herbicides currently available for volunteer corn control: diclofop (Hoelon) for early postemergence spray application, and glyphosate (Roundup) applied with selective applicators such as rope-wick system, which permits herbicide contact only with corn that is taller than the soybeans.

Two applications of glyphosate were made in all but one test, and the plots were cultivated and hand-weeded to remove all weeds other than corn.

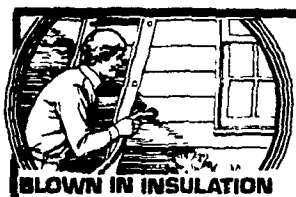
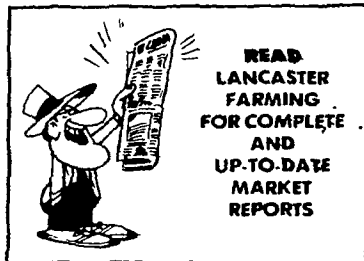
Andersen found that diclofop was more effective in increasing

soybean yields than glyphosate at the higher corn densities. This was probably because the diclofop spray application could be made an average of 19 days earlier than the rope-wick applied glyphosate, allowing the corn less time to compete with the beans, Andersen says. Rope-wick applications had to wait for the corn to grow above the soybeans.

Andersen suggests early overtop application of diclofop for heavy infestations, it may be cheaper to use glyphosate applied when a selective applicator such as a rope-wick unit.



Sprouting through a soybean canopy, "volunteer corn"—a common problem in corn-soybean rotations—stunts soybeans' growth and hinders harvest.



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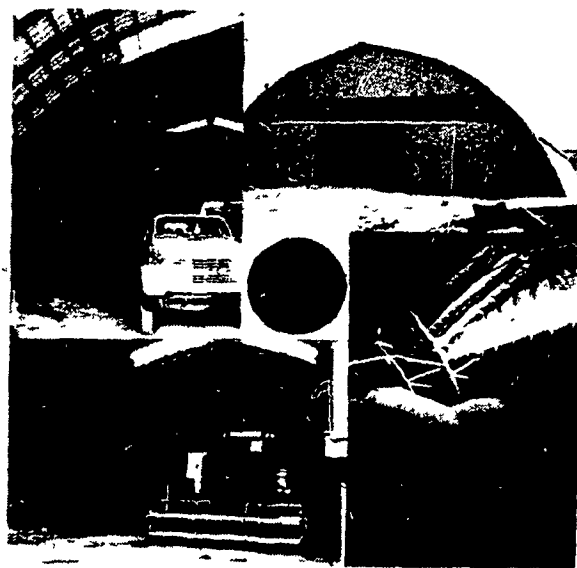
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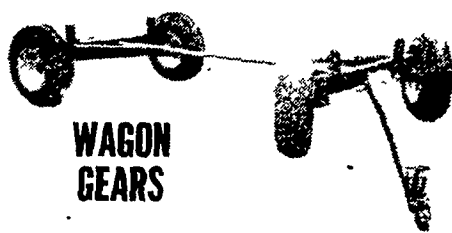
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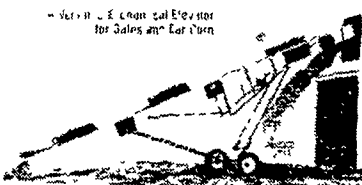
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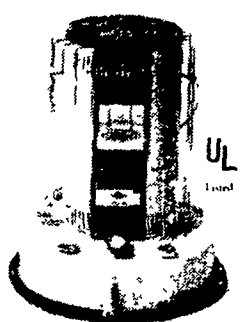
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