

INTERFERENCE EFFECTS OF WEED-INFESTED BANDS IN OR BETWEEN CROP ROWS ON CORN YIELD. William W. Donald, Research Agronomist, U. S. Department of Agriculture, Agricultural Research Service, and William G. Johnson, Assistant Professor, Agronomy Department, University of Missouri, Columbia, MO 65211.

The impact of season-long interference by mixed populations of weeds grown in bands either only in corn rows or only between rows on corn yield has not been reported before. Over three years in Missouri, the ranking of corn yields in response to four weed interference treatments were as follows: (IR + BR weed-free) \geq (IR weedy only) \geq (BR weedy only) \geq (IR + BR weedy). In all three years, (IR + BR weed-free) yields exceeded those for either the (BR weedy only) or (IR + BR weedy) treatments, the two lowest yielding treatments. In two of three years, yields for the (IR + BR weed-free) treatment were greater than the (IR weedy only) treatment, but these two treatments were indistinguishable in a third year. In two of three years, the yields for (IR weedy only) treatment exceeded the (BR weedy only) treatment, but these treatments were indistinguishable in a third year. Finally, the yield of the (BR weedy only) treatment was indistinguishable from the (IR + BR weedy) treatment in two of three years. In a third year, the yield of the (BR weedy only) treatment exceeded that of the (IR + BR weedy) treatment. The ranking of the four treatments in terms of the between row total or grass weed ground cover, chiefly giant foxtail, was inversely related to the corn yield ranking. When bands of weeds grew in crop rows, but were controlled between rows, corn yield partially compensated for weed interference better than when weeds were controlled in crop rows, but not between rows. This research suggests that it may be more critical to control weeds between corn rows than in rows, but controlling weeds both in and between corn rows maximized yield.