

NATURE OF BIENNIAL WORMWOOD COMPETITION IN SOYBEAN AND DRY BEAN.

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Biennial wormwood has become an important weed of several crops within the north central region of the United States and southern Canada. Though little is known about the biology and competitive nature of biennial wormwood, infestations have mostly been associated with soybean and dry bean production. Studies were conducted to determine the emergence pattern of biennial wormwood in soybean at Fargo, ND, and in pinto bean at Minot, ND, under conventional tillage conditions. Emergence patterns of common cocklebur, kochia, and redroot pigweed were also monitored and compared to that of biennial wormwood. At both locations, the seedbed was disked two days prior to seeding of soybean on May 30 at Fargo and pinto bean on June 2, 2001 at Minot in 76-cm-wide rows. Weed emergence was monitored periodically until July 31 in 0.1-m² quadrats placed randomly within plots.

Biennial wormwood seedlings at Fargo began to emerge when percentage emergence for redroot pigweed and common cocklebur was 60 and 85%, respectively. The pattern of biennial wormwood seedling emergence at Minot was identical to that of kochia. At both locations, 80% of biennial wormwood seedlings emerged within 7 to 10 days whereas maximum percentage emergence occurred after 17 days. Biennial wormwood at Fargo emerged slower than common cocklebur and redroot pigweed, but subsequent control generally was lowest where common cocklebur was prevalent. Apparently the wide canopy of common cocklebur intercepted more postemergence herbicide than redroot pigweed, thereby resulting in the lowest biennial wormwood control where common cocklebur was present. The increase in biennial wormwood populations probably is due in part to late emergence after the last herbicide treatment and/or avoidance of herbicide contact under the canopy of crop and weeds.