

# High Plains Journal

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(Article by American Field-to-Field Association.)

## Chemical fallow tested at Akron field station

Chemical fallow is becoming more accepted on the central Great Plains as more farmers try it. "Some who have experimented with using herbicides to control weeds during fallow on a portion of their land are now spraying all their fallow land," says soil scientist Darryl Smika, USDA Science and Education Administration.

Research from the U.S. Central Great Plains Research Station at Akron, Colo., indicates that grain yields on lands where herbicides alone were used to control weeds during fallow averaged 44 bushels per acre. Conventional fallow, which uses subsurface tillage to control weeds, produced grain yields that averaged only 34 bushels per acre.

When soil is not tilled and chemicals alone controlled weeds, only the top 1 to 1½ inches of soil dries—no matter how long between rainfalls.

Although tillage controls weeds, each pass of the tillage implement over the field causes

soil drying as much as ¼-inch in 24 hours. In addition, tillage destroys previous crop residue which can result in increased soil erosion.

Using the best tillage practices, moisture storage in fallow soils rarely exceeds 85%. By using contact and pre-emergence herbicides and no tillage, water storage has been as great as 60% and averages more than 50%. The greater the amount of stored soil moisture resulting from fallow, the greater the chances for a successful wheat crop the following year.

"Some small areas in a few fields around Akron, those on hilltops and highly calcareous, do not seem to respond as well to chemical control as we would like," says Smika. "Because these areas probably represent less than 5% of the total acreage in this area, it is not necessary to treat them differently. The slight yield reduction from them will more than be made up by the increased yields from the majority of the acreage in chemical fallow."

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