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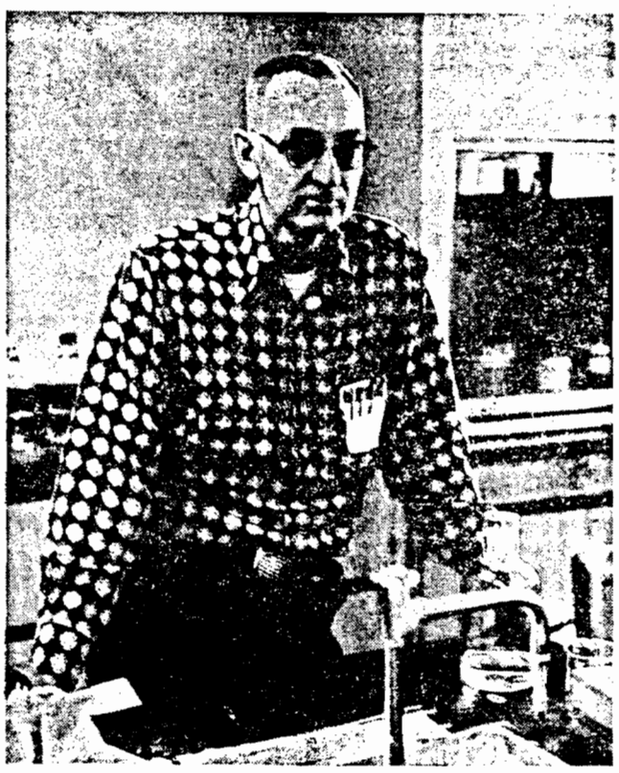
Ecofallow progres continues in Great Plains states

After two years of wide-scale use, all signs indicate that ecofallow farming is a success in the Great Plains states.

According to Dr. Darryl E. Smika, soil scientist at the Central Great Plains Research Station in Akron, Colo., "We're pleased with the progress of ecofallow. During just its first year of use, 1 percent of the acreage in the Great Plains was under this system."

Smika noted that while this doesn't sound like much, it represents a giant step in acceptance of this moisture and soil-saving farming technique. Both the wheat-fallow-wheat and wheat-corn or sorghum-fallow dryland systems have been employed extensively throughout the Great Plains since 1977. Between 80,000 and 90,000 acres were devoted to ecofallow the first year that herbicides essential to the technique were labeled for this use. And this past season, that figure increased appreciably.

"We now figure that about 13 million acres in Colorado, Kansas, Nebraska, and Wyoming are a potential for ecofallow," Smika noted.



SAVES MOISTURE—Darryl E. Smika, soil scientist at the Central Great Plains Research Station in Akron, Colo., said that ecofallow, or chemical fallow as it is sometimes called, has conserved nearly three inches of additional moisture over the traditional stubble mulch system.

Basically, the wheat-fallow-wheat system for the High Plains involves a minimum till concept. Instead of making the conventional tillage trips across the field after wheat harvest, often involving deep plowing, the grower makes a minimum of tillage trips across the field during the fallow period, working the ground lightly with a sweep plow or similar tool.

The idea, of course, is to disturb the ground as little as possible, according to Smika, and leaves maximum amount of crop residue on the soil surface. "What we'd like to come out with at the end of the fallow period is 2,000 pounds of residue per acre," he explained. "With conventional tillage, if you start with the same amount, you're likely to end up instead with 500 to 800 pounds of residue per acre. And this amount depends on the farmer. Some farmers who really want to cultivate and control weeds may work the field six to eight times, which can result in destruction of 80 percent of the residue."

The point that Smika emphasized was that if you till the soil enough to achieve good weed control, you're going to destroy too much of the residue to retain good soil and water conservation. Consequently, a good herbicide program initiated after wheat harvest is an integral part of the system. Commonly used materials are Ortho Paraquat CL, an effective contact herbicide that accomplishes an immediate knock-down of existing weeds, and AAtrex, a good residual herbicide that controls further weed development. Many farmers have found the combination of the two enables them to save precious soil moisture and residue by replacing heavy cultivation.

But why invest in herbicides when tilling dryland wheat has become tradition on the High Plains? Smika responds with two words: Higher yields. He's been working on the ecofallow system since 1961, and the research he has compiled since then indicates that yields of wheat can be improved, operating costs reduced, and erosion controlled by the system on the dry croplands of the High Plains.

Smika has found that ecofallow, or chemical fallow as it is sometimes called, has conserved nearly three inches of additional moisture over the more traditional stubble mulch system. What's more, seven bushels per acre yield increases over stubble mulching were also noted. Black fallow, where the soil surface is heavily tilled to clean all weeds, results in even greater water loss and erosion, and yield differences may be even more dramatic.

According to statistics, rainfall averages in western Colorado have been slightly more than 15 inches per year over the past 70 years. However, in the last 30 years that average has dropped to 13.7 inches per year. With this limited rainfall trend, added importance is placed on moisture-conserving farming systems, according to Smika.

Another part of the problem is that the High Plains are constantly plagued by soil erosion because of the predominance of high winds. Smika found that the standing residues dramatically reduce moisture loss. Taken a step further, he revealed, "The total amount of residue savid is important for maintenance of soil tilth, fertility, moisture retention, as well as erosion control."

He also has compiled data outlining how much residue is destroyed by the various tillage implements: the tandem disc reduces soil residues by 75 percent; a single disc, 50 percent; a chisel, 10 percent (but does little to control weeds); a sweep plow, 10 percent; and rod weeder, 15 percent. Smika also took moisture readings in the different plots and found that the sweep plow and rod weeder caused much less moisture loss than the other three implements.

In his latest work, Dr. Smika has been exploring the timing of tillage during the fallow period under the ecofallow system. He recommends a minimum of trips to lightly till the soil, not so much for weed control, but to scratch the crust of the soil surface to improve maximum water storage. "We still have a way to go in determining when to till. The optimum time may vary because there is a lot of difference in soil types on the High Plains," he said.

But there is no question concerning the benefits of the basic concept, Smika contends. "In our studies, we have yet to be outproduced by tillage systems. And that's not just our findings. Those results are universal," he said.

Large co-ops under attack

A National Commission for the Review of Anti-Trust Laws and Procedures could end the exemption of agricultural co-ops under the Capper-Volstead Act. Congressional observers say those most likely to come under the gun are large co-ops involved with milk, fruits, and vegetables.

COMMUNITY AWARD—Dale Miller (left), representing the Agate Rural Rustler's 4-H Club of Elbert County, Colo., accepts a Community Pride award from Robert Osmundson, public affairs counsel for Chevron USA, Inc., sponsor of the 4-H Community Pride program. The award was made at the annual Colorado 4-H Day activities in Denver for the club's work for charitable organizations and other community betterment projects during the past [illegible]ar. (Colorado State University photo.)