Ecofallow progress 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. Floyd E. Smika, soil scientist at the Central Great Plains Research Station in Aksak, Colo., "We're pleased with the progress of ecofallow farming, even 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 seem like much, it represents a giant step in acceptance of this moisture and soil saving farming technique. Both the wheat-threshing-school and wheat-burn or sorghum-fallow dryland system has been employed extensively throughout the Great Plains since 1977. Between 80,000 and 90,000 acres were devoted to ecofallow the first year that herbicide-emergence-ecofallow technique were labeled for this use. At this rate, he said, that figure increased appreciably.

"We now figure that about 15 million acres in Colorado, Kansas, Nebraska, and Wyoming are a potential for ecofallow," Smika noted.

Basically, the wheat-fallow-wheat system for the High Plains involves a minimum till concept. Instead of making the conventional nine to 14 tillage trips across the field after wheat harvest, often involving plowing the grower makes a minimum of tillage trips across the field during the fallow year. The crops are killed with a spray of glyphosate or a similar herbicide.

"The idea, of course, is to disturb the ground as little as possible, and it leaves maximum amount of crop residue to be the soil. What you'd like to come out with is 15 inches or more. Of course, the same period is 2,000 pounds of residue per acre," he explained. "With conventional farming, if you start with the same amount, you're likely going to come out with 200 to 600 pounds of residue per acre. And 600 pounds, we're talking to the farmer. Some farmers who really want to cultivate and control weeds, they'll till the field six to eight times, which can result in destruction of 80 percent of the residue."

The point that Smika emphasized was that the residue is so good enough to achieve good weed control, and good plant population, but it is too much of the residue to remove with residue conservation. Consequently, a good herbicide program initiated after wheat harvest is an integral part of the system. Commonly used residues, in addition to glyphosate CL, an effective contact herbicide, are usually used to mediate knock-down of existing weeds, and Aibrom, 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 reducing heavy cultivation.

But why invest in herbicides when tillage dryland wheat has become a tradition in the High Plains? Smika responds to these questions with two words: Higher yields. He's been working on the ecofallow system since 1961, and after 12 years of research he has compiled results that indicate 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 preserved nearly three inches of additional moisture over more traditional stubble mulch system. What's more, seven bushels per acre yield increases on a stubble mulching were also noted. Black, coarse, dense soil at the soil surface is heavily tilled to clean all weeds, resulting in even better water loss and erosion, and yield differences may be even more dramatic.

"We're all in agreement, really, as far as the rainfall, and the data is very sound. The soil at the surface is not disturbed, but it is very good water loss and erosion, and yield differences may be even more dramatic."

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

In his latest work, Dr. Smika has been exploring the tilling of residue during the fallow period under the ecofallow system. He recommends a minimum of six tillage 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 can 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 out-produced by tillage systems, and that's just not our findings. These results are universal," he said.

Large crops under attack

A National Commission for the review of Pesticide Control Procedures could end the use of agricultural pesticides under the Copper-Volatile Act. Congressional observers say the commission's most likely to come under the gun are large crops—including corn, milk, fruits, and vegetables.

COMMUNITY AWARD—Dale Miller of Fill, representing the Agate Rural Rudio's 4-H Club of Elbert County, Colo., accepts an Community pride award from Robert O'Connor, 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 improvement projects during the past year. (Colorado State University photo.)