



# CORN TALK NEWS

## RESEARCH UPDATE

### ESTABLISHING SWITCHGRASS IN CORN

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A couple of years back we were asked to help out on a research project evaluating the potential for converting corn fields to switchgrass.

Switchgrass is a warm season perennial grass that provides excellent cover for pheasants, rabbits, and deer. It can also provide high yields of a medium quality forage during the August summer slump in production of the cool season grasses.

One problem with switchgrass is that it is slow to establish, with very low yields in the establishment year. It is difficult to take a year off of production just to get the crop established. In addition to the finan-

cial loss, there is the potential for weeds to invade during the establishment year, greatly reducing the potential success of the switchgrass.

Several conservation groups as well as other interest groups in the state would like to see more acres of switchgrass established to improve habitat and cover for some game species, used in riparian zones for soil stability and reduced nutrient runoff, as additional summer forage, or as a potential source for the biofuel industry. As a result, we have collaborated with Penn State researcher Dr. John Shaffer and USDA researcher Dr. Ron Schnabel to evaluate switchgrass establishment in corn.

Taking ideas from several farmers in the state who had tried this approach, we evaluated various herbicides, plant populations, hybrids, and nitrogen rates. Our basic approach was to no-till switchgrass into corn stubble in late April at a

rate of about 13 pounds of switchgrass seed (pure live seed or PLS) per acre. In early May, we no-tilled corn into the field and treated it with a conventional Roundup plus 2 quarts per acre Bicep herbicide program.

In another part of the field we didn't plant any corn and instead evaluated a number of corn herbicides for their injury potential on the emerging switchgrass. There are a number of effective broadleaf herbicides that provide adequate safety to switchgrass. Therefore, we were particularly interested in examining herbicides that control annual grassy weeds such as foxtail.

Our switchgrass stands in the corn were adequate, but not as good as expected in the first year of establishment. However, on the positive side we were able to produce silage yields of about 20 tons per acre with minimal effect on the corn. None of the corn management factors appeared to have a major impact on the switchgrass, except our preemergence herbicide program (Bicep), which appeared to greatly reduce our first year switchgrass stand.

Even though our stands were thin the first year, the switchgrass filled in well during the second year in both fields we worked with. Now these fields are in their second and third

years of production and the stands are providing excellent wildlife cover.

This fall a we got our reward from the project by seeing a fat doe bound out of the switchgrass on a December afternoon. We evaluated a number of herbicides for switchgrass tolerance including preemergence applications of atrazine, Bladex, Princep, Dual, and Bicep as well as post applications of Accent, Beacon, Basis, and Pursuit. In general, any of the treatments containing Dual or any of the post applied herbicides reduced the establishment year switchgrass stand or growth by at least 50 percent.

The three triazines (atrazine, Bladex, and Princep) caused little or no injury to the switchgrass. However, as in the corn trial, by the year after establishment, switchgrass stands had greatly improved in all treatments, although the best stands were still in the triazine treatments (I believe that some switchgrass plants recovered from the herbicide treatment, and other new plants emerged later in the season and the following year.)

Based on these results, several herbicide programs may be possible for establishing switchgrass in corn. However, the safest herbicide program should be based on the triazine herbicides. Atrazine plus Bladex, or Atrazine plus Princep applied at 2 to 3 pounds

(total triazine) per acre should provide adequate safety for switchgrass establishment as well as some grassy weed control.

Although switchgrass in the nontriazine treatments appeared to recover somewhat by the second year, the reduction in switchgrass stand during establishment certainly raises concern about their utility in this cropping system. Perhaps increasing the switchgrass seeding rate or changing other management inputs might help the success of other corn herbicides, but these variables should first be adequately tested.

The best advise is to avoid establishing switchgrass in fields that had heavy annual grass populations (foxtail and panicum) within the previous two seasons and to use the triazines when necessary for suppression of susceptible weed species. While switchgrass is a great wildlife cover, it can be a challenge to control in no-till corn and soybeans. It is dormant in the spring when conventional herbicides are applied and, once established, tolerates most residual materials.

So in some of our continuous no-till corn and soybean fields switchgrass has spread via tillage and/or harvesting equipment has been become a problem. In tilled fields, it is not a

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## USDA Projects Record Corn Use This Year

WASHINGTON, D.C. — working to expand this for our commodity. At the same time we have some work ahead of us in the export arena, especially in Asia.”

Despite a reduction in corn demand. “Figures showing higher domestic use than projected record corn use production paints a bright future for this crop year.

The recent USDA figures project a total use of 9.415 billion bushels, 10 million bushels higher than the previous annual use high of 9.40 billion bushels in 1994-1995. Exports are down 125 million bushels from last month's estimate, but domestic feed use is up 200 million bushels. Food, seed, and industrial use is also up 40 million bushels, due in part to higher than expected demand for ethanol and high fructose corn syrup.

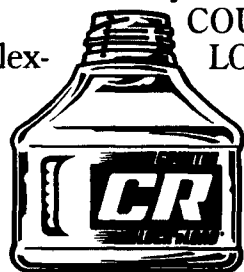
National Corn Growers Association (NCGA) President Ryland Utlaut said he is encouraged, optimistic, and pleased with the USDA numbers.

“This shows there is excellent demand domestically for our crop,” said Utlaut, noting that corn growers will continue

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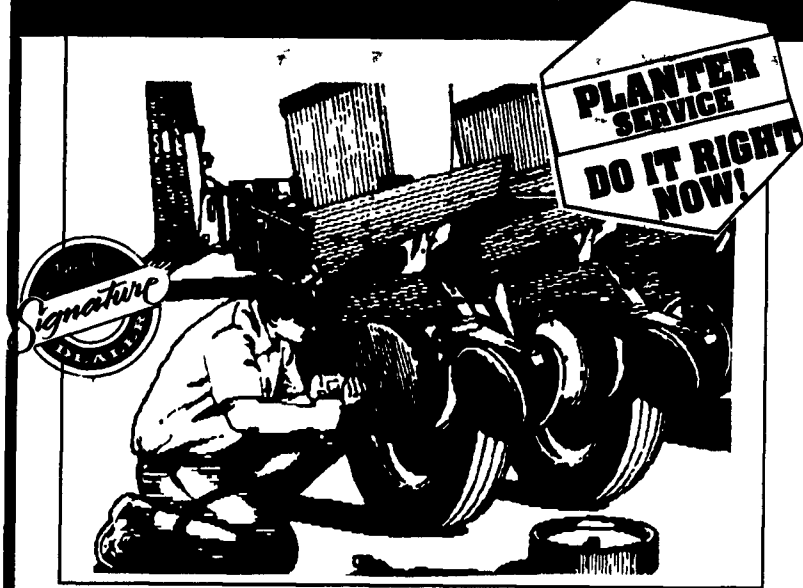
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