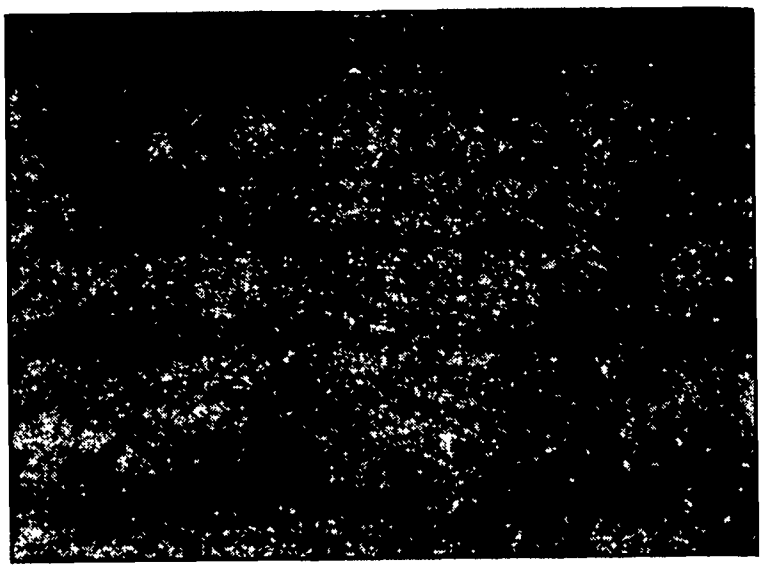
Capitol Region Agronomy Team Report



Uneven corn emergence is evident here.

John Rowehl, capitol region agronomy agent, checks out corn fields.

Effects Of Uneven Corn Emergence
John Rowehl
Capitol Region Agronomy Agent

One of the things I will remember about the 2001 growing season is how dry it was during the planting season and how that resulted in delayed and uneven emergence of corn plants.

It was not unusual for some areas of a field to come up normally because there was sufficient moisture in the soil and the remainder of the field came up several weeks later after we finally got some rain toward the end of May.

I attribute dry soil as the main reason this occurred, but I also think that some factors within the control of the operator contributed to some of this.

If the planter had been set to plant just a little deeper, if opening disks were just a little less worn out, or if planting speed was reduced, corn might have come up just a little more even. I think that we get away with some of these little mistakes in years with more rainfall, and they show up when conditions are more adverse.

We also saw uneven emergence times within a row from one plant to the next. Because of direct competition of plants at two different stages of growth next to one another, uneven stands typically yield less than even stands.

Research was conducted at the universities of Illinois and Wisconsin designed to determine the effect of delayed emergence on corn grain yield. Differing lengths of delays, different patterns and proportions of delayed and normal plants, and two hybrids differing in ear-size flexibility were all evaluated in these field experiments.

Emergence delays of about 10 days scattered throughout the field reduced yield six to nine percent compared to full stands of normal emergence. Emergence delays of about 21 days reduced yield 10 to 22 percent compared to a full stand of normal emergence, depending on the proportion of delayed emergers to normal emergers.

Earlier this year, I was making some observations in one of my test plot fields. I marked some corn plants that were varying in size in a couple of rows.

I thought it would be interesting to return to those same plants and observe for myself how much the larger plants affected the growth of the smaller plants. The plants were at two and four-leaf stages of growth when I marked them.

In the meantime, I had been doing some reading on this topic and found what some extension corn specialists had been commenting about. According to observations made by Bob Nielsen at Purdue, "a growth stage difference of two leaves or greater between adjacent plants will almost always result in the smaller (younger) of the two being barren at the end of the season."

I returned to those marked plants the first week of September to see what had happened.

The corn that emerged late was poorly pollinated and nearly barren. This was typical throughout the field. This was exactly as Purdue's Nielsen had suggested. As a result, many of our fields in the region have a mixture of barren and well-filled ear types that are a result of delayed emergence. This will contribute to variability in the fields for moisture especially where there are large patches of late-emerging plants.

Corn Uses Display Showcased At County Fairs

CORN BITS

E-85 Market Development
Greg Roth
Department Of Crop And Soil Science
Penn State

Currently most of the market for ethanol is to use the product in a 10 percent blend in gasoline as an oxygenate or octane enhancer. Another alternative use of ethanol, though, is to use an 85 percent ethanol blend that is called E-85.

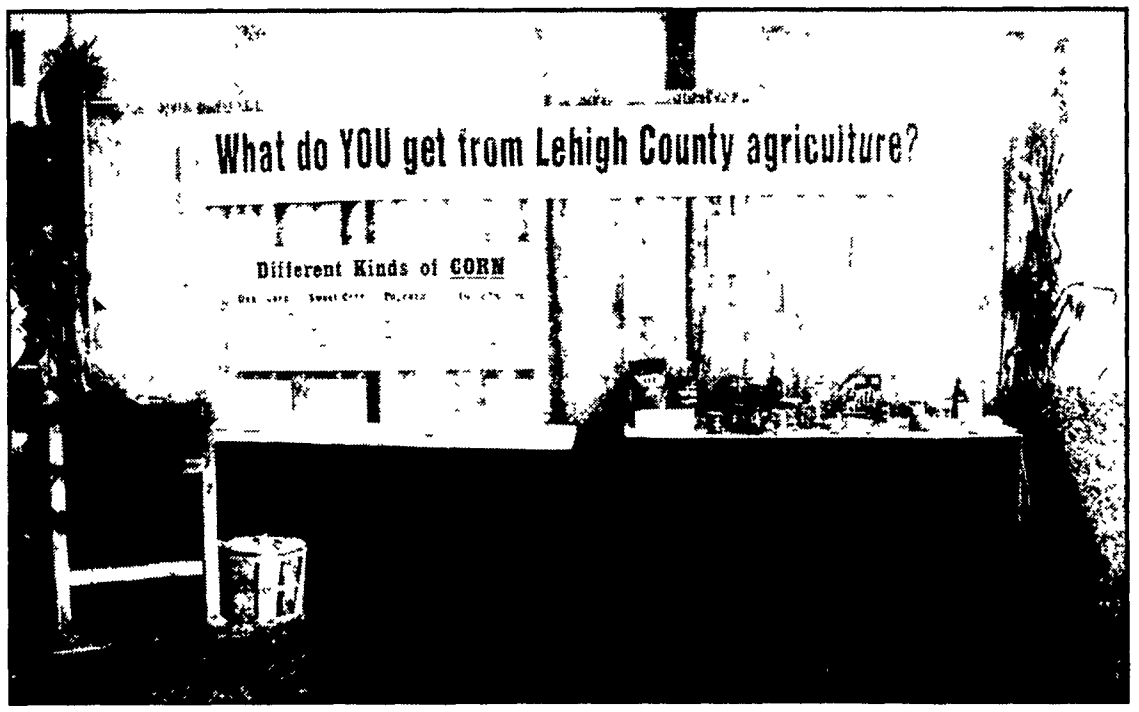
This can be used in many of the new "FFV" flexible fuel vehicles that are being produced now.

Many government vehicle fleets have been mandated to use FFV vehicles. One problem is that there few refueling stations for E-85 in areas such as Pennsylvania.

We learned this summer that the National Ethanol Vehicle Coalition (NEVC) obtained a $100,000 grant from the Pennsylvania Department of Environmental Protection to develop four refueling stations in Pennsylvania. Stations will be located in Dauphin, Lancaster, Philadelphia, and Pittsburgh.

NEVC is interested in developing more E-85 stations around the U.S. and here in Pennsylvania. We recently supported some federal legislation at their request to fund the development of E-85 sites.

We were pleased to learn in a recent letter from Senator Santorum recently that bills have been passed in the House and Senate, earmarking $2 million for E-85 refueling station development nationally.



ALLENTOWN (Lehigh Co.) — The wide range of uses of corn was featured last month at two county fairs. PMCGA and two Penn State extension agents teamed up to develop the displays that featured many of the food and industrial uses of corn. In Fayette County, Extension Agent Don Fretts featured the corn products display at the Fayette County Fair mid-August. In Lehigh County, Extension Agent John Berry helped to develop a display at the Allentown Fair in late August. The Pennsylvania Corn Growers Association supplied a wide range of products from corn that are available in the grocery store. The objectives of the displays was to educate the public about the importance of corn and agriculture in our everyday life.