

Large Turnout For Dauphin, Lebanon Crops Day

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shock when the corn plant is in the four- to eight-leaf stage. It also seems to be more prevalent in areas with a high soil pH and fertility. There may be some potential for a hybrid resistance.

The rye residue toxicity problem showed stunted growth from a reaction to toxins release from the decomposition of mature rye residues till under.

Another signal would be yellowing of the edges of leaves which signifies a lack of potash. This is because of toxin-stunted root development and the inability to get potash in adequate amounts to the rest of the plant.

He said a key factor into avoiding problems from double cropping with rye is to avoid planting corn into fall-harvested rye.

To prevent the problem, take the rye in earlier for ryeage, burn it down, or disc it under before it reaches a height of 14 to 16 inches.

He said that on test plots at Penn State, there was a 10-bushel yield difference between corn planted after mature rye residue and corn planted without rye.

Corn borers may continue to be a problem in continuous corn fields. In 1991, there was a potential for three generations of corn borers in fields located in south eastern Pennsylvania. During 1992, the state had a high population of corn borers.

However management strategies should be more toward alternating crops in fields as a means to

protect the corn crop from the borer.

The Midwest has a similar problem with corn borers, but they don't have the number of varieties of borers as there are in the East. Because of that, farmers can efficiently conduct pesticide applications.

He said that here in the East, the several different varieties of corn borer emerge at different times making it difficult to control with pesticide.

In the Midwest, the fewer varieties of corn borer emerge closer together and producers can target controls.

On the bright side, Roth said that some hybrid corn varieties are promising good resistance to borer.

Frost damage is not necessarily a permanent problem, Roth said. If the plant is still in the early leaf stage — not yet to the six- to eight-leaf stage — let it go for several days to give it a chance to come back.

He said that while the leaves may brown down to the ground, the growth tip in younger plants is below ground and may not have been killed.

After several days, to determine whether or not frost has killed the growth center, split the plant down the middle to the growing point. If it is brown, smelly, or beginning to decompose, it was frost killed.

In other directions, Roth said the near and far future holds promise of change. The main direction of

change is toward more environmentally friendly corn production, as far as nutrient management, pesticide and herbicide applications.

Also, since the larger farms of the Midwest can produce grain corn at a low cost, Roth said he sees increasing pressure on local growers who have to deal with more variables and smaller areas of land to be competitive.

While not specifically providing answers, he said it will become increasingly important to analyze the local situation and consider any advantages over the large growers.

One direction producers may want to look is at the specialty corns which may be coming on soon, such as those hybrids which may be more nutritionally complete and more economical for local livestock producers, compared to feeding No.2 yellow corn shipped in from the Midwest.

Roth also said that coming along, though "very hush, hush" in the industry, is a corn rootworm resistant, high yield hybrid. "I think, in another five years or so, we may see it," Roth said.

He said he also looks forward to a hybrid which is resistant to grey leaf spot, on which researchers are working. Grey leaf spot is a problem with no-till production, he said.

Biotechnology is on the way also with corn. He said that the seed companies are experiencing a resurgence in interest in some varieties such as high-oil-yielding

corn. According to Roth, two companies are joining forces to hybridize a high-oil corn with a high-yield corn.

Also coming along are varieties for stress tolerance and disease resistance. However, he said they will probably emerge in the Midwest and "trickle" here.

Developing corn varieties with specific starch compositions also may have promise, Roth said, adding that he based that on conversations with several seed company representatives.

According to Roth, there are subtle differences in the ability of corn starches to be converted to alcohol. He said that because of those differences, a certain hybrid may be able to provide an edge in efficiency in manufacture of alcohol for energy.

What is needed is better data bases on how hybrids perform on different conditions, he said. Currently the quality of data obtained is too variable.

He said that in the future of corn growing, tracked farm vehicles may become the field machine of choice because of lower incidence of soil compaction. While controlled traffic strategies, similar to ridge-till, may work to reduce compaction, its applicability locally is difficult to foresee because of the irregular field shapes.

Roth said that, in the future, satellite mapping of fields for drought stresses may become available. He said he can foresee work on implements and cultiva-

tors designed for high residue farming.

And, in addition to the coming improvements in nutrient management, nitrogen testing, composting materials (not for soil value, but for handling) and by-product uses (newspaper for carbon to trap nitrogen), Roth said he sees work to be done in weed control and in biocontrols.

For weed control, he said the direction seems to be going to lower rates of chemicals with field specific recommendations and applications based on need.

He said that the agricultural community seems to have learned its lesson with developing toxin-resistance in plants as a result of what happened with the uses of triazine.

Roth said his "crystal balling" also incorporates the increased use of advanced engineering technologies.

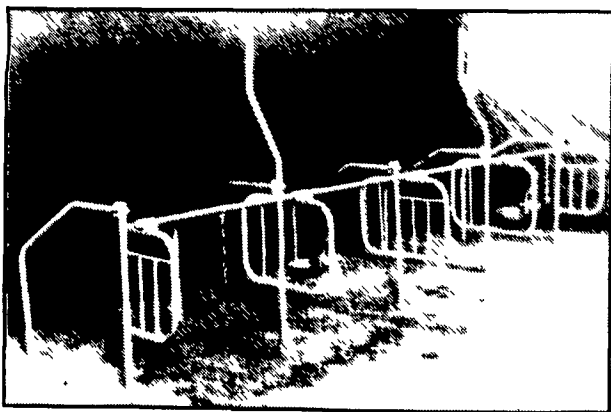
He said that perhaps video technology could be meshed with sensor technology to come up with a system of driving down the field and having a program respond to positive video identification of a weed by applying herbicide.

He said that work is already being done on a knife-like sensor which can detect and map the variability of nitrogen in the field just by being run through the ground like a chisel.

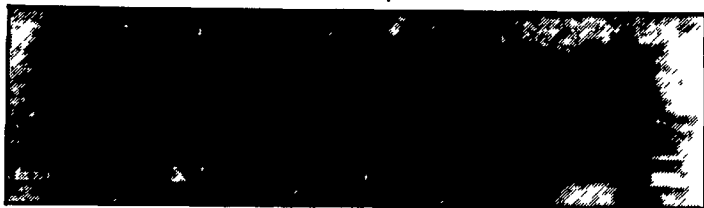
Already here is the use of radar guns to help determine rate of spray applications.

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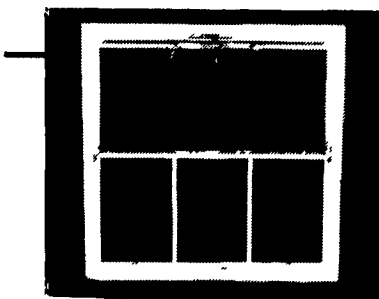
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