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Corn diseases in 1999

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Corn diseases in 1999

Abstract

This year brought some notable disease problems to the corn crop, and it is surprising that the average yield for the state turned out as well as it did. Of course, I spend most of my time in the worst-looking fields so I usually have a pessimistic outlook. Significant disease problems in 1999 included seedling blights, Stewart's disease (Stewart's wilt), rusts, gray leaf spot, and stalk rots.

Keywords

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INTEGRATED CROP MANAGEMENT

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Many cornfields were planted too wet this year, and as a result, 6 percent of the corn acreage had to be replanted (according to Iowa Agricultural Statistics) due to seedling disease or direct effects of saturated soil. Planting into wet soil also contributed to problems with plant development and disease later in the season.

Flea beetle populations were probably at all-time highs in Iowa in 1999. In southern Iowa, insecticide applications for flea beetle control were common, especially in seed production fields. Because of the high beetle populations, Stewart's disease was very common in southern Iowa. The bacterium (*Pantoea stewartii*) that causes this disease overwinters in flea beetle adults. A large population is overwintering this year, so if the winter is mild again, expect a lot of Stewart's disease.

Leaf diseases on corn accelerated very rapidly in August. The most widespread problem was southern rust, caused by *Puccinia polysora*. This disease occurs each year in Iowa, but it has never been as widespread and severe as it was in 1999. In many cases, it occurred together with common rust (*Puccinia sorghi*). Both rusts became common late in the season but southern rust predominated. Why was southern rust so prevalent in 1999? Temperatures in July were well above normal, and even more important, the dew point was consistently very high in July, which means it was very humid and dews lasted a long time on the corn leaves. Rusts are not thought to overwinter in Iowa, so there are no precautions necessary for next year.

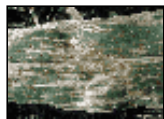


Southern rust destroyed all the leaves on some plants late in the 1999 season.

[1]

In many fields, the leaf disease problems included Stewart's disease, gray leaf spot (*Cercospora zeae-maydis*), or eyespot (*Aureobasidium zeae*) as well as rusts. Gray leaf spot continues to increase its range. In 1999, it reached damaging levels in fields as far to the northwest as Woodbury County, and it can be found in any county in the state. Losses to leaf diseases in 1999 may have reached 30 bu/acre in some fields, mostly due to southern rust,

but usually in combination with Stewart's disease or gray leaf spot. Gray leaf spot overwinters in crop residue, so crop rotation is important, especially in conservation tillage.



[2] **Southern rust and gray leaf spot were frequent companions in 1999.**



[3] **In southern Iowa, Stewart's disease was very prevalent in 1999.**

Many fields with leaf disease problems also suffered from premature plant death. Usually, when plants die prematurely it is due to a combination of factors, including environmental stresses and plant pathogens. This year was a favorable year for stalk rot, including anthracnose top dieback, because the wet spring was followed by hot, dry summer conditions (with some notable exceptions). Premature plant death due to moisture stress, rootworm damage, root rot, leaf diseases, and stalk rot was widespread.

Management of fields with disease problems depends on the specific disease. Of course, the best advice is to rotate away from corn for a year or more if possible. Stalk rot pathogens are perennially present in our fields, and tillage usually does not contribute to their control, unless there is an underlying problem caused by gray leaf spot or eyespot. Controlling other plant stresses such as insect damage and poor fertility (especially potassium) helps. Hopefully, those fields with a disease problem were evaluated for the cause so that informed decisions can be made about hybrid selection, crop rotation, and residue management.

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