

How fertilizer stretches moisture

LANCASTER — Last summer's dry, hot weather hurt crop yields over much of the nation. It was the worst growing season in six years, according to USDA.

The yield estimate for corn in 1980 was about 91 bu/A, down from 109 bu/A in 1979. Even so this makes it the sixth best year for corn on record — not bad for such a poor growing season.

How does good soil fertility help

stretch available water into more bushels?

Adequate fertility stimulates deeper root growth and exploration of the soil. This makes more soil water available to the plant.

Adequate fertility speeds maturity. It is very important for corn pollination to occur before summer drouth hits. On an Illinois soil high in K, corn receiving no

extra K was 14% silked and with adequate K was 67 percent silked on a given date.

Adequate fertility reduces the crop's water requirement. Potassium reduces water loss in plants by lowering transpiration rate and aiding the closing of stomates (pores where plants expel water).

Adequate fertility compensates for lower nutrient uptake. Such

nutrients as N, P, and K need to be swept into plants along with the water. Drouth can damage crops worse when nutrient uptake is reduced. A higher fertility level allows more nutrients to be taken up by a water-stressed crop to help lessen the yield loss.

Crops often respond to fertilizer as well or even better in dry years than in normal years.

In Ohio, the first year had ample rain. Yields were high (160+ bushel), but there was no response to potash. The second year was dry. Yields were down (120 to 130 bushel). But there was a 50 bushel response to K.

In Virginia, corn yielded much better in good years than bad years. But phosphorus increased yields about the same in both — 40 bushel an acre in good, 37 bushel an acre in bad years.

In another Virginia study, high fertility more than doubled in the yield in a poor year — from 53 to 111 bushel an acre. High fertility also gave an excellent increase in a good year — 127 to 205 bushel an acre.

Indiana spent many years

measuring corn's response to potassium. When yields were reduced by too little or too much rain, fertilizer gave the greatest response. Potassium increased yield 39 bushel an acre in low rainfall, eight bushel an acre in medium rainfall, and 48 bushel an acre in high rainfall.

A main force behind today's higher yields is nitrogen. Still more nitrogen will be necessary for tomorrow's even higher yields, squeezing more bushels from every inch of water.

Grain sorghum in Texas needed 240 lbs per acre of N for the highest yield and for the greatest amount of grain per inch of water. Without N grain sorghum produced 45 hundredweight per acre and 1.9 hundredweight per inch of water. With 240 pounds per acre of N, grain sorghum produced 73 hundredweight per acre and 3.5 hundredweight per inch of water.

Farmers get deeper rooting through a healthy, well nourished plant. It has a deeper rooting system that can extract more water from greater depths in the soil profile.

Breeders co-op to meet

LANCASTER — The Seventeenth Annual Meeting of Atlantic Breeders Cooperative will be held Wednesday, March 25, at the Quality Inn Motel located at the Centerville Road exit of Route 30, about three miles west of Lancaster.

Registration, with refreshments, will begin at 10 a.m.

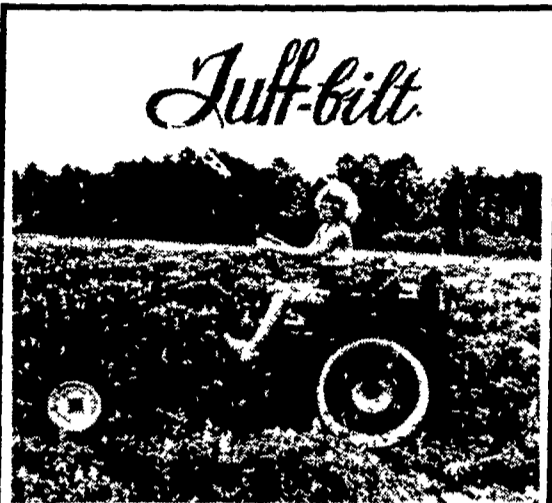
Starting at 10:30 the business session will include reports and certification of Director and Resource/Promotion Committee elections.

Following dinner, Penrose Hallowell, Secretary of Agriculture, Commonwealth of Pennsylvania, will speak on future developments affecting Pennsylvania agriculture.

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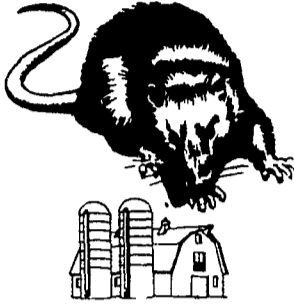
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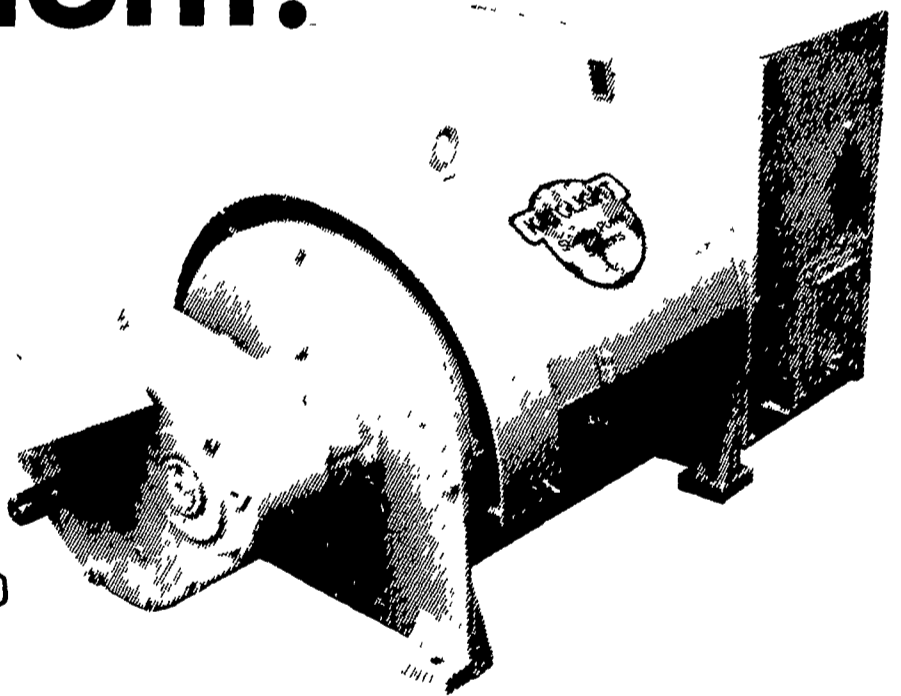
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35LR1	35,000	105,000	55	120/240	150	1	3	580	600
45LR1	45,000	135,000	70	120/240	175	1	3	670	730
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