

## Moisture Adequate; Plantings Lag Behind Last Year

HARRISBURG — Five days were rated suitable for fieldwork around the state for the week ending May 10. Farmers were busy planting corn, potatoes, oats and soybeans and finishing their spring plowing. Other activities included repairing fences, hauling manure, spreading fertilizer, caring for their livestock and maintaining their machinery.

The topsoil moisture levels were rated adequate by 86 percent of the reporters around the state according to the Pennsylvania Agricultural Statistics Service. Farmers in the northern region rated topsoil moisture as 79 percent adequate, 7 percent short and

14 percent surplus. In the central region it was rated 88 percent adequate and 12 percent short, while in the southern region of the state farmers rated moisture levels 92 percent adequate and 8 percent surplus.

Eighty percent of the spring plowing across the state was completed by week's end, well above the five-year average of 70 percent. The northern region was 78 percent complete, the central region was 85 percent complete and the southern region was 77 percent complete.

Peach trees were 7 percent in the pink stage and 93 percent in full bloom or past, about the same as

last year. Cherries were 6 percent in the pink stage and 94 percent full bloom or past, compared to 2 percent pink and 98 percent full bloom or past for the same week last year. By May 10 apples were 4 percent pre-pink, 25 percent pink and 71 percent full bloom or past, compared to last year's 8 percent pre-pink, 10 percent pink and 82 percent full bloom or past.

Thirty-three percent of the state's corn crop was planted compared to 40 percent last year and the five-year average of 28 percent. The northern region farmers had 31 percent planted, the central region was 25 percent planted and the southern region

had 35 percent of the corn crop planted.

The oats crop was 87 percent planted by week's end, compared to 91 percent last year and the five-year average of 78 percent. The northern region was 79 percent planted, while the central region was 85 percent and the southern region was 99 percent planted.

Sixty-seven percent of the potato crop was planted, compared to 66 percent last year and 55 percent for the five-year average. Only twenty-four percent of the state's soybean crop is planted, about the same as last year's 25 percent.

The tobacco planting is complete, slightly ahead of last year's 98 percent and the five-year average of 99 percent.

The wheat and barley crops were in mostly good condition statewide. The barley crop is 57 percent in pre-boot, 23 percent boot and 20 percent headed, slightly ahead of last year's 64 percent in pre-boot, 20 percent in boot and 16 percent headed. The wheat crop is reported to be 79 percent in the pre-boot stage and 21 percent in boot compared to 91 percent pre-boot and nine percent in boot last year at this time.

The alfalfa stands were rated good by 69 percent and fair by 31 percent of the state's farmers. Clover-timothy stands were rated 64 percent good and 36 percent fair. The amount of feed being obtained from pastures was rated 13 percent above average, 76 percent average and 11 percent below average.

## Scientists Get To 'Root' Of Soybean Problem

WASHINGTON — Genetic engineering hasn't been practical for soybeans because laboratory grown soybean cells refuse to produce roots and shoots. Now U.S. Department of Agriculture scientists are getting roots—with help from a microbe.

When plant cells are grown in a laboratory so scientists can splice in new beneficial genes, the cells' own genes for root and shoot development somehow "turn off."

"Without roots and shoots you

obviously have no plant, and if you can't get a plant back, there's no point in genetically engineering cells," plant physiologist Lowell D. Owens of USDA's Agricultural Research Service said today.

For some plants—like alfalfa, tobacco and petunias—scientists can just add synthetic hormones and roots and shoots develop. With the soybean this doesn't work.

So, Owens and geneticist Ann C. Smigocki used *Agrobacterium tumefaciens*, a soil microbe that forms tumors on plants, to transfer its own root-forming gene into soybean cells. These cells then produced roots for more than two years.

This microbe is no stranger to gene transfer. In nature, it forms plant tumors by inserting genes for both root and shoot formation at the same time.

The scientists inactivated the gene for shoot development in *A. tumefaciens* and got what they wanted: only the rooting gene went to work.

They tried doing the reverse to get shoots—inactivating the bacterium's root gene—but it didn't work in soybeans. They are exploring other ways to get shoots in soybean at the agency's Tissue Culture and Molecular Biology Laboratory in Beltsville, Md.

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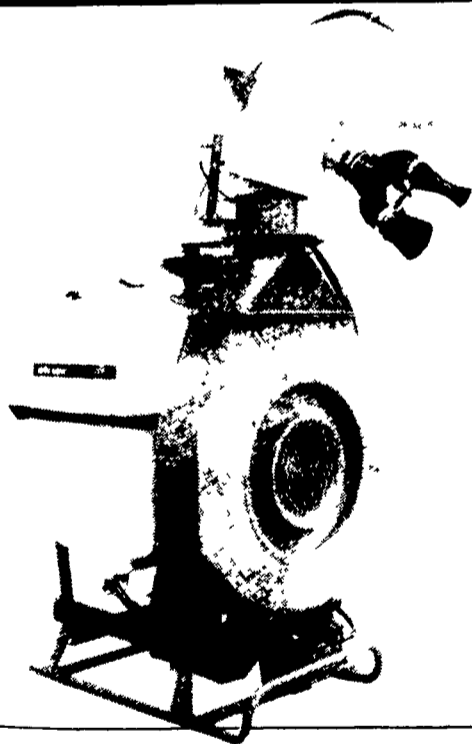
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