

## PUC Withdraws Charge Against County Trucker

The Public Utilities Commission Tuesday withdrew a complaint charging a Lancaster County trucker with unlawfully cutting rates.

The commission said the complaint had been filed by the Lancaster County Livestock Trucking Association against Oliver H. Sensenig.

The complaint was withdrawn, the PUC said, after Sensenig had adjusted his charges to conform with those prevailing at Lancaster Union Stock Yards. Earlier, the PUC had fined Sensenig \$1,000 for charging rates at variance with his tariffs.

## Dog Training Season Closed

Sportsmen who own hunting dogs were reminded today by the Pennsylvania Game Commission that the season for field training closes at midnight, March 31. The closed season extends from April 1 to July 31.

T. F. Bell, Chief of Law Enforcement for the Commission, said the closed season is designed to protect nesting game birds and animals. He stated the law prohibits the owner of any dog to permit it to chase or trail any wild bird or animal during the four-month closed season. The only exceptions are made in certain counties where petitions have been filed to permit fox hunting with dogs.

## Railroads OK Reduced Rate Extension

HARRISBURG — Reduced freight rates on hay, scheduled to end on March 31, have been extended by eastern railroads to April 30, State Agriculture Secretary Leland H. Bull said today.

The one-month extension, Secretary Bull stated, carries also the permission to substitute two 40-foot cars for one 50-foot car as a means for making more freight cars available at the reduced rates.

Action by the railroads, announced at their New York office, conformed to special requests by the State Department of Agriculture on behalf of farmers in 55 counties that have been on drought disaster status as a result of last summer's long dry spell.

Secretary Bull said hay freight shipments under the reduced rate arrangement have been easing acute shortages

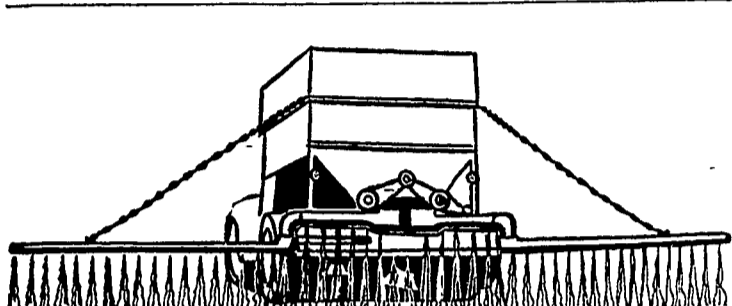
## Forest Exhibit At Quarryville

Area woodland owners are urged to see the exhibit now on display in the window of the Quarryville TV store on State Street in Quarryville.

The theme of the exhibit is Tree Farming and it tells how land owners who are practicing woodland management can gain recognition by having their forested acres certified as a Tree Farm. By definition, a Tree Farm is an area of privately owned tax paying land dedicated to the production of repeated crops of forest products.

The Tree Farm movement is sponsored nationally by American Forest Products Industries,

on many of the state's dairy and livestock farms, and that a month's extension of the rate concession will be an added help in carrying them nearer to the spring pasture season.



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Inc., and here in Pennsylvania by the Pennsylvania Forest Industries Committee and the purpose of the program is to promote wise use of our woodlands. Today over 60 million acres of our Nation's timberlands are certified Tree Farms and numbered among them are the following landowners in Lancaster County:

- Joseph S. Cutler, Drumore;
- Paul H. Rhoads, Harrisburg;
- Clifford J. Backstrand, Lancaster;
- Forest Preston II, Oxford;
- John D. Kendig and Clarence S. Eitner, Manheim;
- Conrad Appel, Paradise.

### • Solanco YFA

(Continued from Page 1) were particularly interested in the "double six" herringbone milking parlor. Fly said one man can do the milking in the parlor, but the six milking units can be better operated by two men.

At Winternall Farms, about two miles away, manager Richard Sutton explained the breeding and management program for the 85 purebred Holstein cows milked in a stanchion barn with a pipeline milker. One of the attractions on the farm was a three year old "Excellent" Holstein bull which Sutton is using as a herd sire. The farm recently sold a young bull to a New York breeding cooperative for \$12,000.

The tour was arranged by Amos Rutt, Quarryville R2, tour chairman, and William Fredd, teacher of vocational agriculture and advisor of the Solanco Young Farmers Chapter.

## HOLLAND STONE

"The Building Stone"

# A RESEARCH MAN LOOKS AT SINGLE CROSS HYBRIDS



By Dr. Wayne Whitehead  
P-A-G Research Associate and Consultant-Plant Genetics

Does research evidence justify the continued switch, of better farmers, to more single cross acreage? Too much is at stake to plant single crosses just because they are prettier. Nor is a person likely to get taken in the second time if the product is no better even though it may carry the single cross label. Calculating the odds in farming is not gambling. It is part of the reasoning process of sound business. Experience and evidence determine the best odds against the environmental unknowns every time a plant population, a fertilizer, or fertilizer rate, or

seed corn is chosen, or a cultural operation is performed. Experience and evidence support single crosses now more than ever before.

Have single crosses actually performed better in replicated comparisons? Are they any more variable from year to year? Do the broader gene base regular four-way hybrids provide any greater insurance against the environment? Is length of pollen shedding time of concern? Are single crosses too new to risk? Although these are valid questions, most of them originated long ago. They should be re-examined in light of present knowledge.

The most extensive single cross results are available from the last few years of research testing. Wide differences exist between single crosses, as they do with other hybrids. Highly selected single crosses and special crosses have generally outyielded regular hybrids of similar maturity.

For example, in widely scattered P-A-G replicated research locations, all single crosses outyielded regular hybrids as follows:

- East Central Research Area (Ill., Ind., Ohio, Pa.) 1961 Av. 19 locations 11.4 bu.

- 1960-61 Av. 41 locations 12.1 bu.
  - West Central Research Area (Iowa, Neb., Mo., Kan.) 1961 Av. 21 locations 9.4 bu.
  - 1960-61 Av. 42 locations 7.1 bu.
- P-A-G, competitive, and University Trials showed similar differences in magnitude. For example, in Purdue University 3-year averages, single crosses outyielded regular hybrids by 7.8 bushels, even though some of the newer single crosses were not included.

All single crosses compared with all four-way hybrids do not tell the whole story. The trends are all in the same direction however. Highly selected P-A-G SX's gave more favorable performance trends than the average of all single crosses.

What about the variability? The averages over many locations and years give a good indication. If single crosses were more variable, they should average out similar to the four-ways. They did not. In all groups of comparisons, they averaged higher. A more scientific comparison, the coefficient of variation of 19 scattered locations over four states showed

about 15 per cent variation for both four-way and single crosses. Selected single crosses were no more variable in yield than regular hybrids. In fact, some four-way hybrids were more variable than some single crosses.

Does a wider gene base such as found in four-way hybrids give greater protection against the environmental unknowns? First, what is meant by wide or narrow gene base? Many genetic types are present within a broad gene base variety whereas, all plants are the same, or more nearly the same, in a narrow gene base variety.

In addition to regular four-way hybrids and open-pollinated corns, a fallow, and other large crops have broad gene bases. Some of these are alfalfa and varieties of other forage crops are forthcoming from universities and private companies which have more narrow gene bases than anything developed heretofore.

Soybeans, wheat, oats and other cereals, sorghums and single cross corn have narrow gene bases. Not enough practical evidence has been found for this rather academic question to recommend variety mixtures or to change the narrow gene base crops where possible. Sorghums merchandised in the Great Plains by all the industry are single crosses even though available moisture fluctuates widely from year to year.

With other crops then, narrow gene bases have not been considered a serious handicap. With corn the pollen does have to travel from the tassel to the ear. Should the period of pollination be spread out as long as possible? Considerable difference exists between length

of pollen shed between different singles and different four-way hybrids. All types of hybrids produce much more pollen than ever needed. Seldom have seed set problems ever been related to spread in pollination period or lack of pollen in corn. Nevertheless, all P-A-G hybrids are carefully screened in many environments.

Are single crosses so new that something unexpected may occur? The idea of the single cross was conceived before that of the four-way hybrid. Four-way hybrids were resorted to in the early days before highly vigorous inbred lines were found and before production technology reached its present stage. The plant breeder has tested single crosses for many years to predict four-ways. The seedsman has always grown single crosses to produce four-ways. Many differences exist between single crosses and for this reason all P-A-G special crosses are widely tested.

Greater differences probably exist between hybrids than most realize. The morphological differences that we see may be insignificant yieldwise. Inside the plant are large anatomical differences. The most important differences probably are the physiological differences or the ones relating to biological efficiency in synthesis, water usage, mineral uptake and carbohydrate storage. A farmer should be concerned with the total amount of starch storage, or yield from an acre.

Now, let's be honest. Does research evidence justify the accelerated trend to more single cross acreage? Obviously, yes!