

5-Acre Corn Contest Has Many Benefits

Corn Talk News RESEARCH UPDATE



CORN TALK NEWS

PENNSYLVANIA MASTER CORN GROWERS ASSOC., INC.

ALTERNATIVE DESIGNS FOR HYBRID STRIP TESTS

Gregory W. Roth
Associate Professor
Agronomy
Penn State

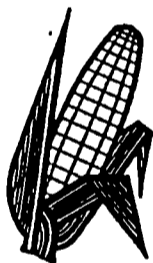
Hybrid strip trials are usually conducted in one of two designs. One is a non replicated strip with individual hybrids laid out in adjacent strips. Another method is a tester design that involves a tester hybrid to be placed between every second or third hybrid in the trial. In this design, hybrid yields are adjusted based on the yields of the adjacent tester strips. Comparisons between hybrids are then made on the basis of adjusted yields. The purpose of this procedure is to adjust for variation that might be encountered across the field.

A recent article published in the July 1992 issue of the Journal of Production Agriculture by M. A. Schmitt of the University of Minnesota and S.J. Openshaw and M. W. Davis of Pioneer Hi-bred International examined the relative benefits of the two designs. In the study, 19 large plot yield trials were conducted in Minnesota using five hybrids each. The authors used statistical techniques to estimate the variation encountered with each design.

The authors found that in 14 of 19 trials, the use of the tester system actually increased the variation encountered in the test. In most cases, the adjustment using the testers did not increase the precision of the test. As a result, the use of testers to increase the confidence of performance data is usually unwarranted. The authors suggest that to increase the precision of on-farm testing, instead of going to a tester system, a second replication should be considered. Replication could reduce the variation by one half and could be accomplished with little extra work compared to the tester system.

The failure of the tester system to adjust yields may be due to several reasons. First, the variations in fields are not always consistent in one direction. This is obvious to anyone who has flown over Pennsylvania farmland. Secondly, hybrids may not react the same way to gradients in productivity. We know that some hybrids are more sensitive to drought stress, for example, than others. And finally, the tester system spreads the test out over more land and there is a greater chance to encounter more variation.

This study shows that we should reconsider how we design hybrid strip trials. Some good basic rules to follow on designing strip trials include: 1) keep the number of entries as low as possible, 2) replicate if possible, 3) limit the test to hybrids of a similar maturity (or group the hybrids by maturity in the test) and 4) don't rely only on the results of a single trial.



1995

Pennsylvania Five-Acre Corn Club



Sponsored by:

Pa. Master Corn Growers Assn.
Penn State Coop. Extension
Commercial Seed Industry

What is the objective of the Five Acre Corn Club?

The Pennsylvania Five Acre Corn Club is a program designed to bring together corn growers, seed dealers, and extension agents who strive to achieve more profitable corn production in Pennsylvania.

How is this accomplished?

Producers enroll in the program through their county extension office before July 1. Before corn harvest, they complete a survey of their production practices and a farm management exercise. In 1995, this management exercise will focus on estimating operating and ownership costs for corn planters.

At harvest, an extension agent or an approved supervisor will assist them in performing a yield check and collect the survey information. Producers will receive a summary of yield and management information from all participants after the data is summarized. Top producers will be recognized at the Pennsylvania Crops Conference

What are some of the key rules in the Club?

1. One entry per farm or field. An entry fee of \$10 is due at sign-up. (Checks should be made payable to Penn State University-Corn Club) A farm operation consists of one or more farms, managed by one or more farm operators. A farm operator, who is 18 or more years of age by August 1, 1995, is eligible to enter the Pennsylvania Five-Acre Corn Club. Final report forms should be received at the Agronomy Department Office, 116 ASI Building, by December 1.
2. Size of field. Not less than five acres of one hybrid or variety at one location on the farm. If corn is grown in contour strips, two or more strips may be entered, all strips entered must be sampled at harvest time. Total corn acreage in contour strips must total not less than five acres.
3. Hybrid or variety. The hybrid or variety must be commercially available.
4. Fields cannot have received any irrigation.
5. Harvesting instructions for yield determinations are outlined on the report form. Harvesting locations must be selected by the official or officials checking yields. Class 3 requires harvesting and weighing a minimum of 3 acres and all harvesting must include the entire length of the field. The harvesting methodology utilized by National Corn Growers Association Corn Yield Contest which involves harvesting one pass, skipping three passes, harvesting another pass for a total of 1.25 acres can be substituted for the three acre harvest size if desired. The enrollee must be prepared to have the field opened to facilitate machine sampling.
6. Enrollee must furnish all labor to harvest, weigh and prepare samples for determining moisture content. These operations must be done in the presence of the official or officials certifying the yields.

7. Samples for determining moisture content are to be placed in moisture proof bags at time of harvest. The moisture percent must be determined within 24 hours on one designated moisture tester for the county.

8. Awards will be made for the three highest yields in the Shelled Grain Harvest Classes and in the Ear Corn Harvest Classes. A minimum of five entries is required to establish a class with awards. Only one class can be entered per farm, or farms, under one management. Eligibility for the three year average class is based on the current year's results plus the two previous year's results. All three year results must have been in the same harvest class. A Champion will be named for each class based on grain yield per acre. A club member may receive only one award in a given year. A three year average champion is not eligible to receive a first, second or third place award in the current year, and may not compete for another three year average trophy for three years. If a person places in both three year and current year classes, the award will be made in the three year class.

For more information on rules or the Corn Club, check with your extension office or contact Greg Roth at the Penn State Department of Agronomy at 814-863-1018

Issued in furtherance of Cooperative Extension work Acts of Congress May 8 and June 30, 1914 in cooperation with the U.S. Department of Agriculture and The Pennsylvania Legislature. L. F. Hood, Director of the Cooperative Extension Service, The Pennsylvania State University

The Pennsylvania State University in compliance with federal and state laws is committed to the policy that all persons shall have equal access to programs admission and employment without regard to race religion, sex national origin, handicap age or status as a disabled or Vietnam era veteran. Direct all affirmative action inquiries to the Affirmative Action Office, The Pennsylvania State University, 201 Willard Building, University Park, PA 16802 (814) 863-0471

Corn Club Benefits:

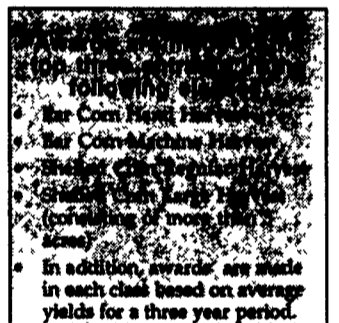
- an accurate yield estimate
- learn a useful farm management technique
- a summary of management practices of other corn growers
- the ability to compete for one of over 21 awards presented annually.

What have we learned in the past from the club?

- Many growers are using less than 1 pound of N fertilizer per bushel of corn harvested.
- 40-60% of the participants sidedress N.
- The average plant population at harvest on farms in the club is about 24,000.
- High yields can be produced on less productive soils, provided rainfall is timely.
- About 20-25% of corn club fields are cultivated.
- P and K are frequently applied well above crop removal rates.

How do you enroll in the Five-Acre Corn Club?

Call your county extension office to check if your county is participating in the corn club. Check the rules on the brochure to see if you and your field are eligible to participate. If so, complete the entry form and send along with the registration fee of \$10 to the county office. You will receive the appropriate forms to complete in August. Finally, make arrangements with your extension office for the yield check at harvest.



Introducing Ag-Chem's Newest Compact Sprayer



Unit comes with all the following equipment standard:

- | | | |
|--------------------------------------|--|-----------------------------------|
| System: | • 8 HP Honda engine, elec. start, w/9203 hypro pump (belt drive) | • DMI Quik-Cushion Bumper |
| • 500 gallon poly elliptical tank | • Recessed fifth wheel w/stake pocket | • Ball valves for positive on/off |
| • 45 ft. center pivot full hyd. boom | • Raven SCS440 w/Dickey-John Radar | • Rancho shocks & stabilizers |

All this is mounted on a Ford F-350 4x4, 5 speed manual transmission with an 11,000 GVW rating. XLT package and 7.3 liter turbo engine, with many other standard features available.



Serving the Farming Industry for over 30 Years
1188 Enterprise Rd., East Petersburg, PA 17520



FOR MORE INFORMATION & FREE CATALOG 1-800-326-3009