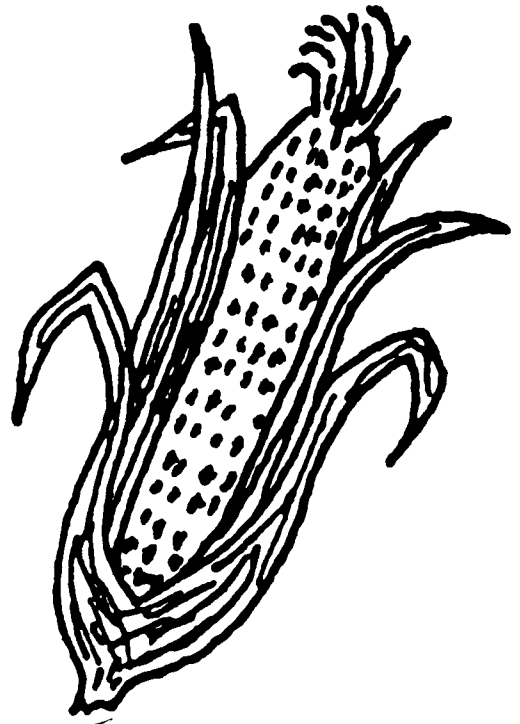


Voluntary Programs, Funding

(Continued from Page 10) increase funding for Section Clinton Administration's fiscal 319 to \$80 million, Wenms-1994 budget proposal to trand expressed disappoint-

ment that no 1994 funds were specified for USDA's Water Quality Incentives Program. "There is ample evidence that when farmers are provided with information on management practices which minimize erosion and runoff and enhance their economic viability, they are quick to adapt without facing any government mandate," he said. Wenstrand used as an example his experience with no-till farming, which he first experimented with a decade ago. He now uses a no-till system to farm about 1,500 acres of corn, soybeans and wheat.

For more information on how to protect water quality, contact the Alliance for a Clean Rural Environment at (800) 545-5410.



Corn Talk News

RESEARCH UPDATE

CORN TALK NEWS

PENNSYLVANIA MASTER CORN GROWERS ASSOC., INC.

ALTERNATIVE DESIGNS FOR HYBRID STRIP TESTS
Greg Roth

Hybrid strip trials are usually conducted in one of two designs. One is a nonreplicated 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.

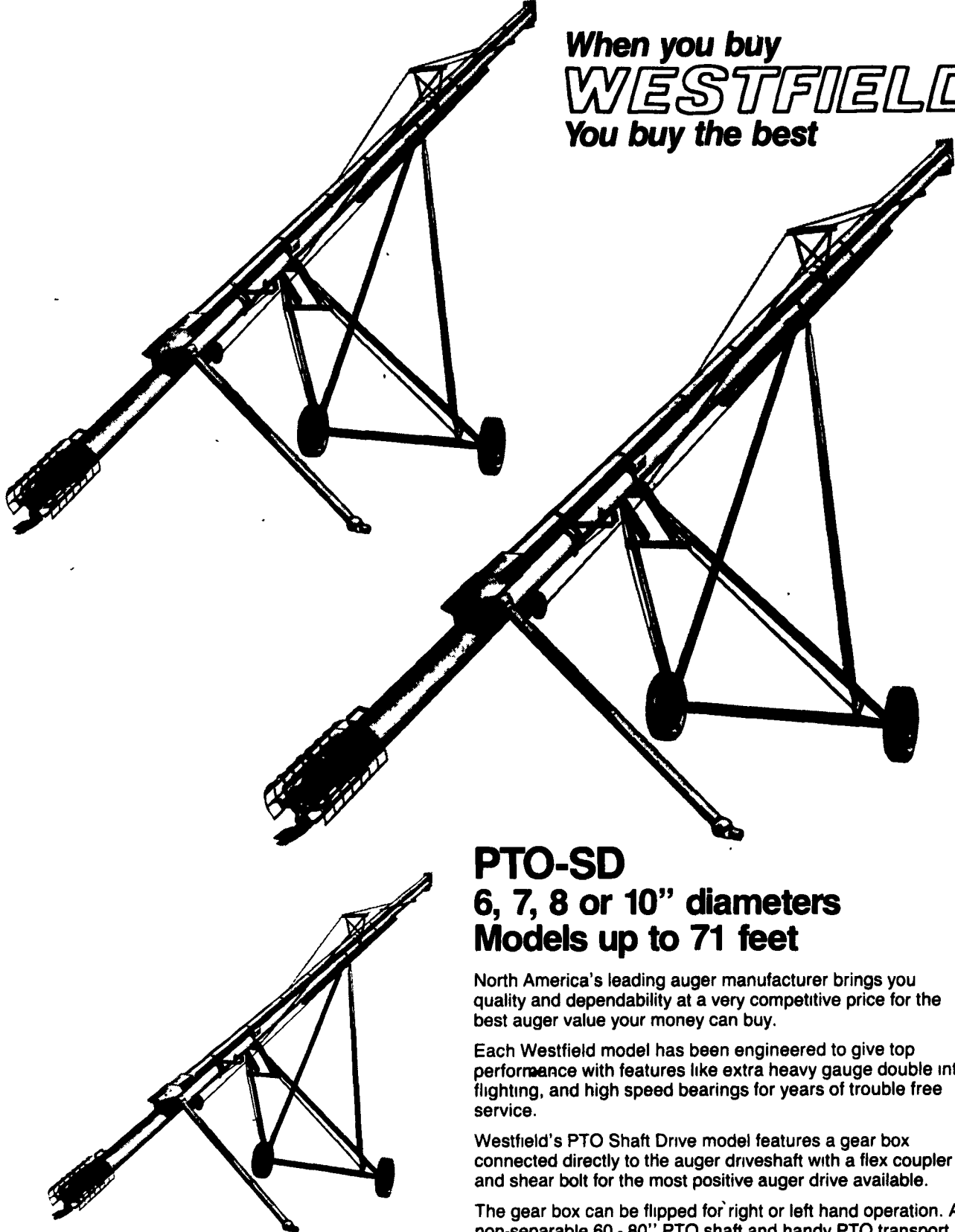
The authors found that in 14 of 19 trials, the use of the tester system actually increased the variation encountered in the test. In most cases, the adjustment using the testers did not increase the precision of the test. As a result, the use of testers to increase the confidence of performance data 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:

- Keep the number of entries as low as possible
- Replicate if possible
- Limit the test to hybrids of a similar maturity (or group the hybrids by maturity in the test)
- Don't rely only on the results of a single trial.



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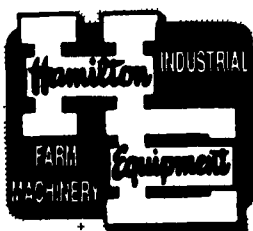
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