

## Here's how to design your own yield trial

BLOOMINGTON, Ill. — A farmer can gain meaningful information by looking at university plots, at seed company yield results, and at his neighbor's crop all he likes, but there's no substitute for testing hybrids on his own farm.

But how do you design a test plot that will give you meaningful results? And what should you look for when examining those results?

Gary Elder makes his living designing and evaluating test plots for Funk Seeds International. As product evaluation scientist, Elder looks at hundreds of test plots annually, and he provides the following guidelines for farmers wanting to perform their own on-farm hybrid evaluations.

Keep the plot from being too large. One-half to one acre per hybrid is adequate.

"Many growers feel they do not get meaningful results unless the hybrids are planted on large acreages. But the larger the plot, the more field variation you will have. Field variation can cause tremendous differences in performance," Elder states.

Select a uniform field. If the field has "poor spots" running through it, plant rows perpendicular to those spots so that all hybrids being tested are subjected to the same soil conditions. Select a location that is representative of your farm and that is as uniform as possible.

Use one of the test hybrids as a check. That is, plant the

same hybrid three or four times in the plot, at equal intervals between the other test hybrids. The performance of the check hybrid should not vary in the plot by more than five or six bushels per acre. If it varies more than 10 to 15 bushels, then there is too much field variation, according to Elder.

Plant hybrids of different maturity. Probably two early hybrids, three or four medium maturity hybrids, and two late maturing hybrids should be included in your test. This allows you to evaluate more hybrids in the maturity to which most of your crop will be planted. But treat all of the hybrids alike.

According to Elder, all hybrids should be planted on the same day, at the same population and row width, and at the same level of fertility. This will give you the most fair comparison between hybrids. Differences in maturity can be taken into account at harvest time.

Don't let one year's test make your decisions. Elder says that a good testing program should be an on-going program.

"You may want to throw out your poorest performer after one year, but don't give up on a hybrid just because it does not come out on top in yield. Growing seasons vary, and some hybrids can take stress better than others," he says.

Watch your plant height when laying out the configuration of the plot.

Do not plant a short hybrid between two extra tall hybrids, especially if you are only planting four rows of each hybrid, says Elder. The tall hybrids will shade out the short hybrid, providing untrue results.

Your seed dealer can provide information on expected plant height.

Plant enough rows for each hybrid. Although there is no formula for the number of rows to be planted for each hybrid, Elder says that six to eight rows per hybrid

work well. Four rows in probably a minimum, and more than eight will make the plot larger than may be desirable.

Eliminate as many variables as possible. Treat hybrids equally. For most meaningful results, manage the test plot just like you manage the crop on the remainder of your farm.

With the seed on the ground, the next step is evaluation. Accurate records should be kept throughout the entire growing season, Elder says, in order to correctly compare hybrid performance.

Check germination and emergence. The early growing season is a good time to check for hybrid resistance to corn borers or other pests as well as uniform stands.

Note the date of flowering, too. Ideally you should plant hybrids with varying flowering dates to spread the risks at pollination time. Therefore, it is important to note the flowering date of each hybrid.

Keep track of the season and not special conditions, such as available moisture, and the effect of those conditions on hybrid performance.

Yield is only one harvesttime evaluation. Monitor harvest moisture, dropped ears, standability, disease and insect

resistance, combining ability, root lodging, and other important considerations (such as shuck coverage or grain quality).

Check for overall plant soundness, especially if it has been a year where there was little stress.

"If you haven't had any severe wind prior to harvest, squeeze the base of the stalk to see if a hybrid might be 'spongy'. If it is, it may not stand well under more stressful conditions," the Funk researcher says.

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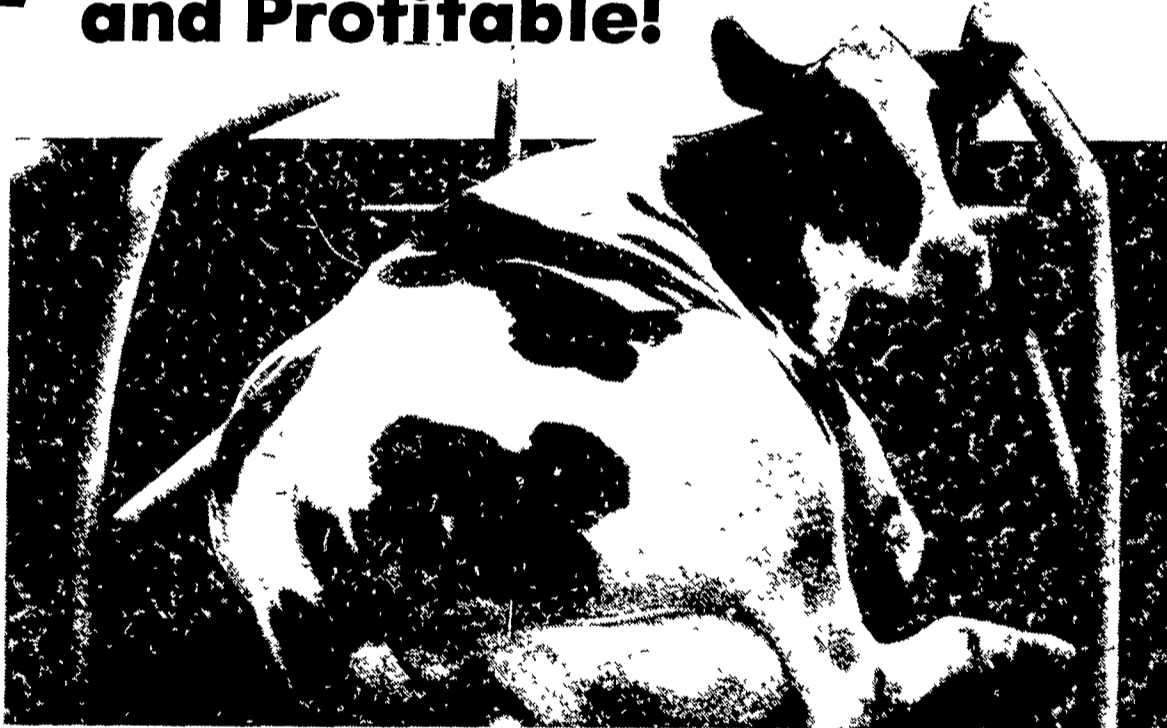
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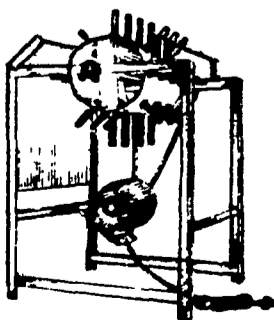
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