



**CORN ROW WIDTH STUDIES**

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Our past results with reducing row spacings have shown yield responses from about 0 to 10 percent, depending on the location.

It has been unclear what factors influence the response to row spacing, however. Some national summaries of research data on row spacing studies have suggested that the farther north you go, the greater the response to narrower rows should be. Positive benefits from row spacing studies in Michigan, Minnesota, and New York appear to confirm that.

This year we participated in row spacing studies at three locations: at the Steve Groff Farm in Holtwood, Lancaster County, at the Landisville research station in Lancaster County, and on the Tim Beardslee farm in Columbia Cross Roads, Bradford County. Each study had a little different objective and provided some more insight into narrow rows responses and management.

At the Groff farm, Steve Groff established replicated field length strips of Dekalb 618 at a plant population of about 25,000 plants per acre in both 15- and 30-inch rows in two different fields. Groff doubled-back using a Deere 7000 planter to achieve the narrow row spacings. We sampled the fields for silage yield by taking 1/500 acre hand samples prior to harvest.

Groff irrigated these two fields twice and, as a result, yields ran in the 21 ton per acre range. The narrow rows resulted in a 9 percent benefit or about 2.4 ton per acre advantage that was fairly consistent across the eight comparisons that we made on the farm.

We also tried to estimate the root mass resulting from 15- and 30-inch rows at two different times in the season, but were unable to show an advantage for the 15-inch rows at

either time.

At our Landisville research farm, we conducted two studies with narrow-row corn. One was a weed control study to look at the benefits of narrow rows with a Roundup Resistant hybrid. In the second study we evaluated the effects of hybrid and planting date.

In the Roundup Ready narrow row study, we collaborated with Dr. Bill Curran and his team. Curran found only minor effects of row spacing on weed control with the 15-inch row spacing. Basically we found you pretty much need the same herbicide program in 15-inch rows that you do with the 30-inch rows.

The 15-inch rows provide a little more competition that may suppress weeds for future years but not enough to eliminate herbicides in this year. In this study, we saw no yield

advantage to the 15-inch rows. Bill's studies also suggest that either multiple applications of Roundup or Roundup combined with a preemergence herbicide program may be necessary for acceptable weed control with the Roundup Ready corn hybrids.

In the planting date study at Landisville, we collaborated with John Yocum, Lancaster extension agent Bob Anderson, and Pioneer agronomist Joe Mayer to look at the influence of hybrid and planting date on row spacing response. Silage yield responses to narrow rows in this study averaged about 4 percent. The grain yield benefit was about 2 percent to narrow rows.

The upright leafed hybrid (33VO8) responded better to the narrow rows and high population than the 36K27 hybrid, with the less erect leaves. Increasing the population and reducing the row spacing resulted in a 2.2 tons per acre yield increase for the 33VO8 hybrid and a 1.3 tons per acre increase for the 36K27 hybrid.

Silage yields were also increased more with narrow rows when planted late, averaging a 1.7 tons per acre benefit from the late May and early June plantings and basically no benefit to narrow rows at the early and mid May planting dates.

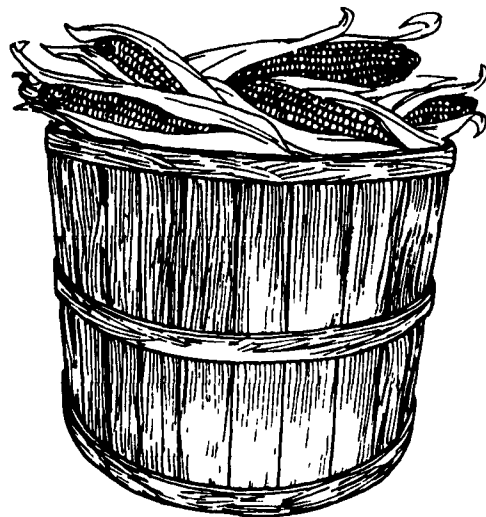
At our Bradford County plot we evaluated the response to

both row spacing and plant population. Here we saw a 2 tons per acre benefit to increasing the plant population from 29,000 plants per acre to 32,000, but no benefit from reducing the row width to 15 from 30 inches. The corn in this field was stressed because of the drought and delayed maturity and supports the notion that narrow row responses may be best in high yielding environments. Research conducted at Cornell seems to confirm this as well.

This is the third year we have done narrow row studies with Tim Beardslee and have found a yield benefit to narrow rows

in one of the three years. However, we are still waiting for a normal year to occur in this area. The response to higher population this year agree with Beardslee's philosophy on the need for 30,000 or more for silage production in his region.

The narrow row results from this year continue to suggest benefits occur in some but not all trials. Narrow row benefits may be greatest in high yield environments, at slightly high plant populations and perhaps corn for silage. Responses of different hybrids and planting dates will require more study. We hope to continue more research in this area next year.



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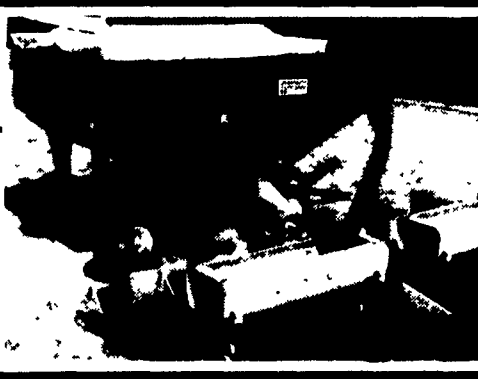
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