

Corn Growers Become Narrow-Minded

**Donald Specker
Pioneer
Hi-Bred**

rows.

DES MOINES, Iowa — Are you becoming narrow-minded about corn production? If you are, you're not alone.

There's a new wave of interest in growing corn in rows narrower than the current 30-inch standard, thanks largely to the pioneering work of a few individuals.

The real impetus has come from those that grow more inherently narrow-row crops, such as soybeans and sugarbeets, in rotation with corn. Farmers in the Red River Valley of North and South Dakota and Minnesota are adopting the practice of growing corn, sugarbeets, and soybeans on the same 22-inch row spacing. The forces of simplicity and economics have moved these growers into producing all three crops with the same narrow-row planting, harvesting, and related equipment.

Another force moving growers toward narrower rows has been the performance of modern corn hybrids at higher and higher plant populations. At a given population, wider rows pack the plants within the row tighter than at a narrower row width; for example, at 30,000 plants/acre, the distance between plants within the row on 36-inch spacing is a tight 5.8 inches, while on 20-inch rows the distance increases to a comfortable 10.4 inches. The trend for higher populations goes hand-in-hand with the trend toward narrow

It wasn't that long ago that corn was grown in 36-inch rows (more commonly 38 inches in the Midwest), in large part to help accommodate horse-drawn equipment. The initial decrease in row width down to the current 30-inch standard was not to accommodate production of two different crops with the same equipment, but because there was a noticeable yield advantage.

The increase in yield with narrow rows has been attributed to an increase in leaf area index resulting from more equidistant plant spacing. Higher leaf area index means more solar radiation is intercepted by the canopy, resulting in increased photosynthetic production and higher yields. Corn in narrow rows also shades the ground quicker, an added bonus for weed control and moisture retention in drought situations. In fact, the most consistent increases in yield for narrow rows occurs for irrigated corn, where conservation of moisture is critical.

Converting to narrow rows for corn is an economic decision. Increased costs include modifying the combine head, equipping a tractor with narrow tires, retooling cultivators, and possible modifications to the planter and sprayer. On the plus side, the wide-row corn planter could be sold, and higher yields may be expected. Higher yields could eventually offset initial fixed costs, but the payback is long term. A clear indi-

cation of the yield increment expected with narrow rows is needed to make an accurate economic decision.

Pioneer Row Width Experiments — 1991-92

In 1991, Pioneer agronomists began conducting row width experiments to measure the response of corn in 20-inch vs. 30-inch rows. Three populations were used in 1991 — 18,000, 26,000, and 32,000 plants per acre. To help distinguish the highest optimum population, the rates were raised in 1992 to 24,000, 30,000, and 36,000 plants per acre. At Johns-

CORN TALK NEWS

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Growers Should Sell

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into the pipeline rather quickly. "Be careful in watching this corn market," Bower said. "It may be an opportunity for the end user to contract some of your needs. You need to pay

attention to the things going on in the news. I try not to hype things up too much, but as a producer and an end user, you need to pay close attention to the markets."

ton in 1992, only two rates were used — 26,000 and 34,000 plants per acre.

Four hybrids were grown at

each location, replicated four times. The results are listed in the tables below:

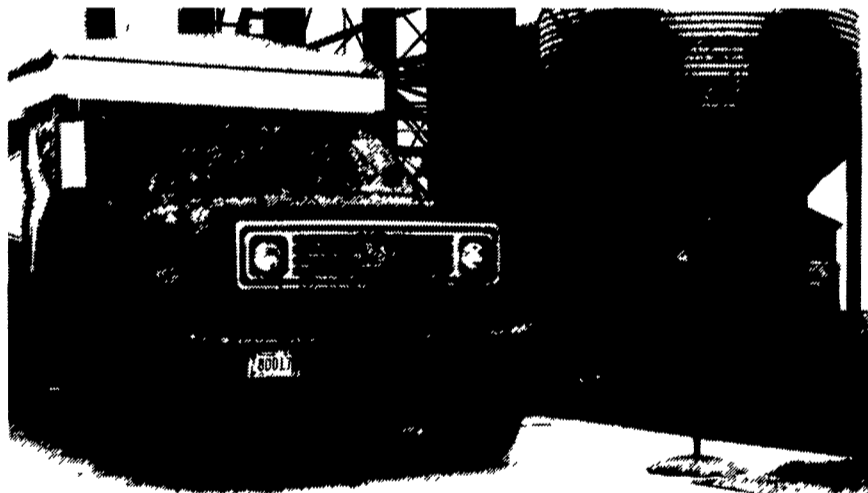
Corn Response To Row Width And Population — 1991, 1992

State	Location	Year	Pop	— Row Width —		Diff		
				20 inch	30 inch			
SD	FLANDREAU	91	18,000	142 Bu/A	128 Bu/A	14 Bu/A		
			26,000	156	147	9		
			32,000	165	155	10		
			Average	154	143	11		
MN	OLIVIA	91	18,000	143	140	3		
			26,000	166	163	3		
			30,000	167	165	2		
			Average	158 Bu/A	156 Bu/A	2 Bu/A		
IA	JOHNSTON	1991	26,000	213 Bu/A	204 Bu/A	9 Bu/A		
			34,000	221	220	1		
			Average	217	212	5		
SD	CANTON	92	24,000	167	154	13		
			30,000	181	167	14		
			36,000	182	171	11		
			Average	177	164	13		
MN	KIMBALL	92	24,000	108	105	3		
			30,000	115	111	4		
			36,000	115	109	6		
			Average	112	108	4		
OVERALL AVERAGE 91-92				164 Bu/A	157 Bu/A	7 Bu/A		

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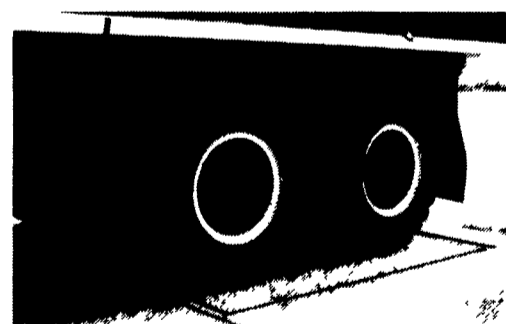
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