

The Dairy Business

By Newton Bair

Does it pay to be on time?

If you are catching a flight to Miami, singing in the choir or getting married, the question is foolish — you'd better be on time or you're out of luck.

Books have been written about the importance of correct timing in breeding, milking, and many other aspects of dairy farming. Correctly timing the planting and harvesting of crops has a profound bearing on yields and profitability.

But the effect of late planting is difficult to measure, especially when it is complicated by other conditions like rain, heat, drought or other things that we can't control.

We do have some tools to measure the effect on yield of late planted corn. We've known for a long time that corn yields are greatly reduced by late planting. We also know that any reduction in the optimum stand or population will also reduce yields.

A formula to help us measure the reductions has been computerized by Iowa State University scientists and can now be used on the TI-59 programmable calculator. We can quickly estimate the anticipated yield of corn planted later than the ideal date (about April 25 in southeastern Pennsylvania) and/or having a population density less than optimal (26,000 plants per acre).

This can help us decide whether to replant to a higher population if the stand is poor, or accept a somewhat reduced yield. Replanting will mean planting much later, of course, which will also affect yields. The dilemma is in deciding which is the lesser evil, low population or late planting.

Using the calculator program, tables have been worked out to help visualize the effects, both individually and combined. They were compiled on the assumption that the optimum yield potential is 150 bushels of

shelled corn per acre, with a maximum population of 26,000 plants at planting.

Table I shows the effect on yield of reduced stand alone, when the corn was planted early, at or near the optimum date of April 29 in southeastern Pennsylvania. The only effect is from reduced stand. There is a rapid reduction in yield potential as the stand is reduced.

TABLE I
Effect on Corn Yield by Reduced Stand
Corn Planted at Optimum Time (April 29)

Plants/Acre	Yield Potential	Late Plant	% Potential Yield by Reduced Stand
26 000	150 bu	100%	100%
22 000	146 bu	100%	97%
18 000	135 bu	100%	90%
14 000	120 bu	100%	80%

The combined effect of reduced stand and delayed planting can be seen in Table II. The right hand column shows the percentage of maximum yield potential resulting from both later planting and reduced stand. These combined effects are more serious than either one above. Planting corn two weeks later than the optimum time reduces yields by 6 percent in addition to the lower yield from reduced population.

TABLE II
Effect on Corn Yield by Reduced Stand
corn planted May 15 (2 weeks late)

Plants/Acre	Yield Potential	Late Plant	% Potential Yield by Reduced Stand
26 000	141 bu	94%	94%
22 000	137 bu	94%	91%
18 000	127 bu	94%	84%
14 000	112 bu	94%	74%

Table III shows a reduction of 17 percent in yield due to planting 30 days after optimum. Added to the reductions due to lower population, the yields are seriously reduced.

TABLE III
Effect on Corn Yield by Reduced Stand
Corn Re-planted May 29 (4 weeks late)

Plants/Acre	Yield Potential	Late Plant	% Potential Yield by Reduced Stand
26 000	125 bu	83%	83%
22 000	121 bu	83%	80%
18 000	113 bu	83%	75%
14 000	100 bu	83%	67%

How can this information be used?

Suppose you've planted early but hail, cutworms or stalkborers or some other unforeseen disaster has reduced the stand from your original 24,000 plants to an actual count estimate of 14,000 per acre. Your yield potential is now reduced to 80 percent or about 120 bushels per acre.

Your decision on whether to replant or accept the reduced yield will depend on just how much time has elapsed between the original planting and replanting. If you can replant by May 15 you might increase the yield potential to 90 percent optimum with a full stand. But if replanting is four weeks late, around the end of May, the most you could expect would be about 83 percent of your potential.

Any decision you make must consider other variables. The calculations of this or any program designed to aid in complex decisions can only be valid within the assumptions and constraints built into it. It must therefore be used with discretion and tempered with common sense.



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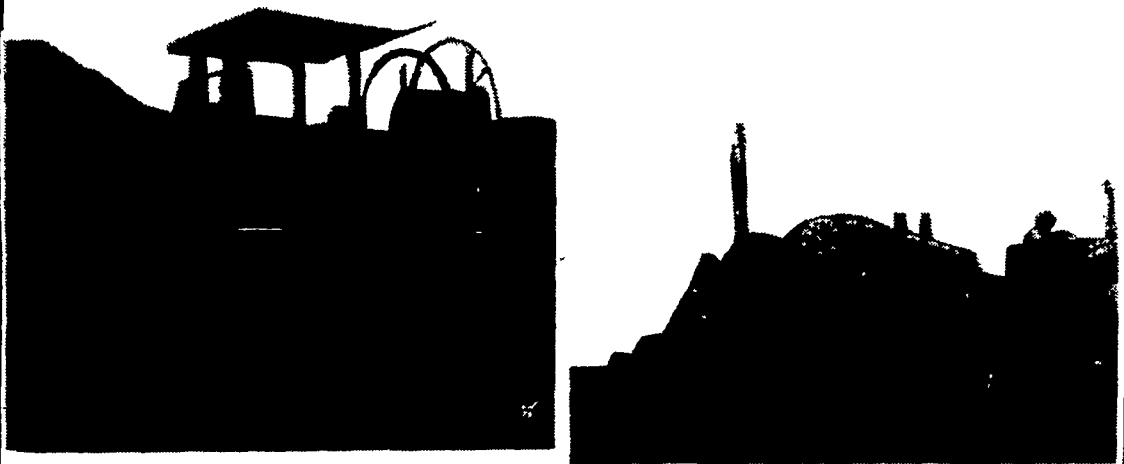
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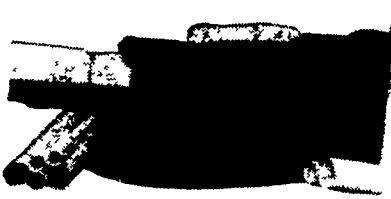
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