Agricultural Extension Service ● University of Minnesota

FACT SHEET

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Minnesota Relative Maturity Rating Of Corn Hybrids

It's important to select corn hybrids for local conditions. Maximum yields are obtained with "full-season" hybrids. To harvest maximum yields of dry shelled corn, you should select hybrids which reach maximum dry weight (physiological maturity) before the first killing frost. To aid farmers, Minnesota law requires that seed corn must be registered and designated with "the day classification and zone of adaptation . . . . , as declared by the owner or originator." This fact sheet describes the Minnesota Relative Maturity Rating System.

In 1939, the Minnesota Legislature established relative maturity zones and classifications. The Minnesota Agricultural Experiment Station grew hybrids in the zones of adaptation. Kernel moisture percentages were compared to the averages of experiment station hybrids which were used as standards. The test hybrids were evaluated for 3 years before they were classified.

The law was revised in 1961. Presently it establishes classifications in increments of 5 days for the five zones of adaptation (figure 1). Also, owners now assign maturity ratings after evaluating their hybrids in the zones of adaptation and comparing them with standard hybrids. Owners are allowed 4 percentage points moisture above or below the average of three designated standard hybrids. The Minnesota Department of Agriculture commissions the Minnesota Agricultural Experiment Station to periodically check ratings. The Minnesota Department of Agriculture uses these data to determine if the hybrids are correctly rated. The owner is required to change the rating if a discrepancy exists.

For example, if a company thinks it has a hybrid of 105-day relative maturity (RM), it tests the hybrid in replicated trials in the south central zone in comparison to the three 105-day RM standard hybrids. If the new hybrid tests 27.5 percent kernel moisture at normal harvest compared with 23.0 percent for the standard hybrids, the new hybrid would not be within the 4 percentage points. It would not qualify for a 105-day RM rating. However, the standard hybrid's average could be as low as 23.5 percent. Then the new hybrid would qualify for a 105-day RM. This explains why some 105-day RM hybrids may not differ much in kernel moisture percentage at harvest from some hybrids rated 110-day RM. This can happen in all maturity ratings yet the hybrids are correctly labeled according to law.

The Minnesota Relative Maturity Rating System categorizes corn hybrids into maturity groups. It should not be associated with absolute days, even though hybrids are referred to as "110-day" or "115-day" hybrids. To illustrate this point, Table 1 gives two hybrids' time length from planting and emergence to 30 percent ear moisture when grown in their adaptation zone. Calendar days associated with growth stages do not correspond to the relative maturity designations. However, when there are 5 days difference between ratings, the earlier hybrid should reach physiological maturity about 5 days before the later hybrid.

The state is divided into five corn-growing zones (figure 1) with suggested maximum relative maturities. When using the Minnesota Relative Maturity Rating System, you should first identify your area's full-season rating. Then you should select hybrids with that maturity rating to obtain maximum yields. If hybrids are rated correctly and planting occurs at normal dates (May 1 - May 20), kernels should reach physiological maturity before the date of the average first killing frost. If planting is delayed or if you desire to harvest at an earlier date, you should select a hybrid with an earlier maturity rating. If your corn is not reaching expected maturity, use hybrids with earlier ratings.

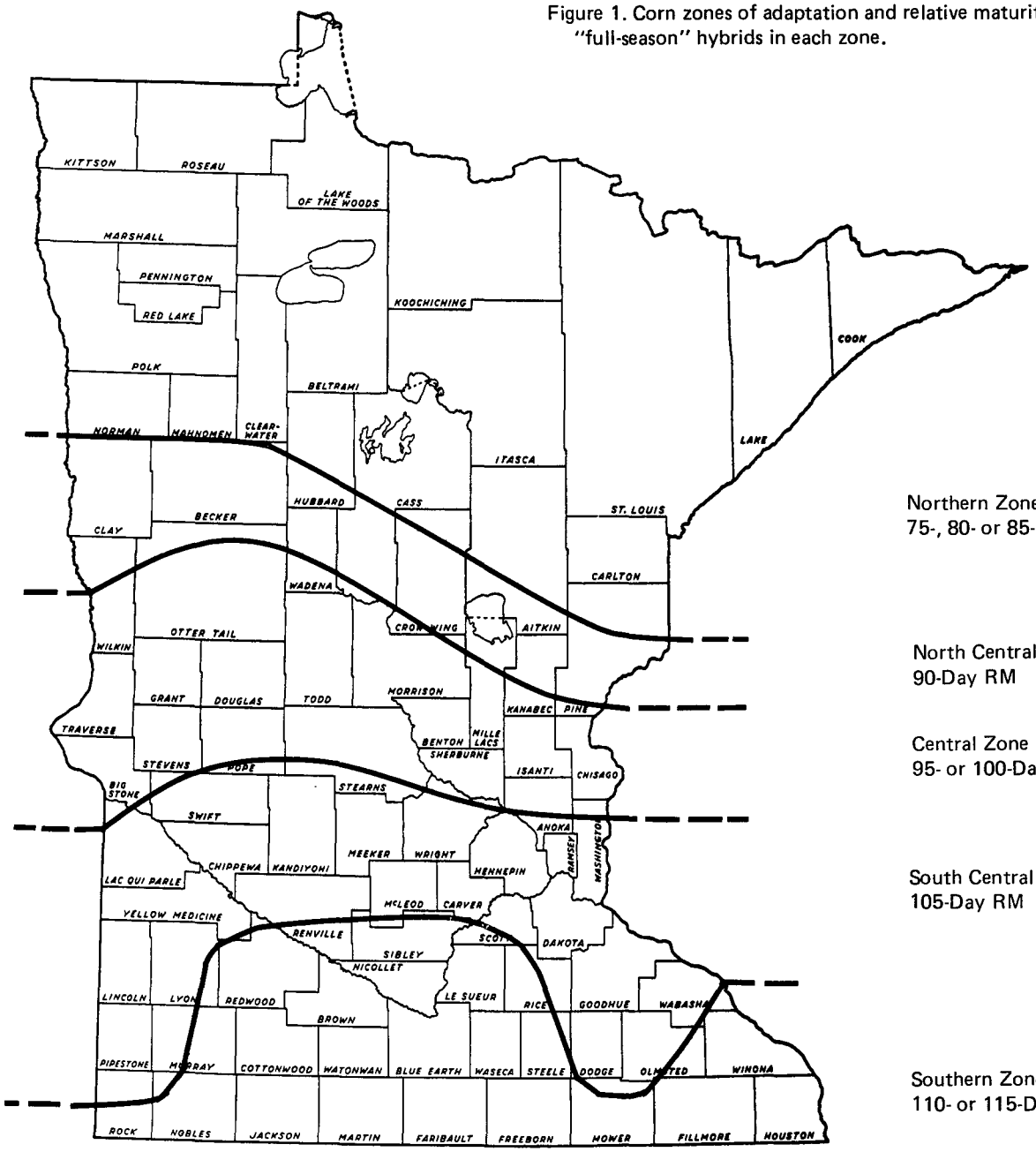
For more information regarding maturity regulations, see the State of Minnesota Agricultural Seed Laws issued by the Department of Agriculture.

Table 1. Calendar days from planting and emergence to 30 percent ear moisture for hybrids of adapted maturity at Lamberton and Morris

Location and hybrid maturity	Planting date	Calendar days to 30% moisture From planting	From emergence
Lamberton—110-day relative maturity	April 25	154	130
	May 4	146	127
	May 17	145	133
	May 31	*	*
Morris—95-day relative maturity	April 27	153	126
	May 9	144	129
	May 17	144	132
	June 1	*	*

* These full-season hybrids did not reach 30% moisture before frost when planted at the last date.

Figure 1. Corn zones of adaptation and relative maturity ratings for "full-season" hybrids in each zone.



Northern Zone
75-, 80- or 85-Day RM

North Central Zone
90-Day RM

Central Zone
95- or 100-Day RM

South Central Zone
105-Day RM

Southern Zone
110- or 115-Day RM

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