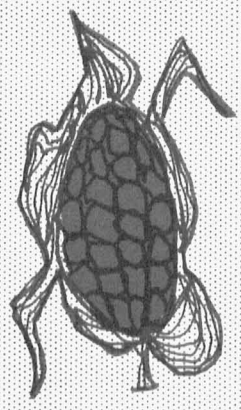

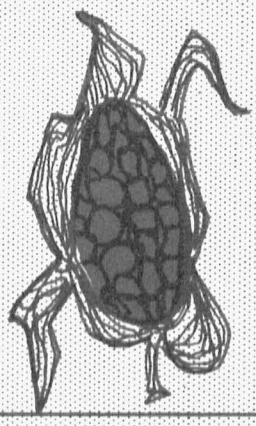

Date-of-Planting Studies with Corn

North Missouri
Research Center

B 832 1/66/3½M
Agricultural Experiment Station
University of Missouri

CONTENTS

DATE-OF-PLANTING Studies with CORN

NORTH MISSOURI RESEARCH CENTER[1]

by
M. S. ZUBER[2]

Corn date-of-planting studies were conducted at the North Missouri Research Center located near Spickard for the five-year period of 1960 through 1964. Four dates of planting were made on or about April 20, May 10, June 1, and June 20 each of the five years.

An objective in addition to that of determining the most suitable date-of-planting was to determine the reaction of hybrids of different maturities to different dates of planting. Thus, eight hybrids representing the four relative maturity groups of 90, 115, 125, and 140 days were selected for the study. The number of days for relative maturity indicates the approximate number of days from planting to physiological maturity.

Hybrids chosen for the four maturity groups were Iowa 4376 and Iowa 4470 for the 90-day; US13 and Kansas 1639 for the 115-day; Missouri 804 and US523W for the 125-day; and Dixie 33 for the 140-day maturity.

Hybrids were planted in 2 x 5 hill plots with four replications for each planting date. Five seeds were planted in each hill. The plants in each hill were later thinned to three.

The plots for all dates of planting were harvested at the same time. Data for ear corn weight, root and stalk lodging, grain moisture, and ear height grade were obtained at harvest. Ear corn from each plot was sent to the University at Columbia for determination of earworm penetration grade, shelling percent, and test weight per bushel.

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[1] Joint contribution from the Crops Research Division, ARS, USDA and University of Missouri Agricultural Experiment Station. This study was supported in part by a research grant from the Garst & Thomas Hybrid Corn Company of Coon Rapids, Iowa.

[2] Research Agronomist, Crops Research Division, ARS, USDA and Professor of Field Crops University of Missouri.

ACRE YIELD

Average acre yield of four relative maturity groups for the four dates of planting over the five-year period are presented in Figure 1. The mean acre yields for April 20, May 10, June 1, and June 20 were 114; 113; 105; and 77 bushels, respectively (Table I Appendix).

Little difference in acre yield was found between the April 20 and May 10 planting dates. A reduction of about 8 bushels occurred between the May 10 and June 1, and 36 bushels between May 10 and June 20 planting dates. A reduction of 0.4 of a bushel resulted for each day of delay in planting after May 10 until June 1. For each day of delay after June 1 a reduction of 1.4 bushels occurred.

The average yields for the four planting dates over the five-year period are shown in Figure 2. The relative yield performances for the April 20 and May 10 planting dates were consistently the highest over the five years. Mean yields for June 1 and June 20 were lower and somewhat more erratic than those for the first two dates. The difference in yield between the April 20 and June 20 planting dates was 37, 42, 40, 32, and 35 bushels for the years 1960, 1961, 1962, 1963 and 1964, respectively. The three maturity groups of 90, 115, and 125 days gave about the same relative yield response over the five-year period while the 140-day maturity group had the lowest yield in 1964 and the highest in 1963 (Figure 3). Hybrids of 140-day maturity are considered entirely too late for this area.

Conclusions:

1. Highest acre yields can be expected from plantings made between April 20 and May 10.
2. Relative yield response of hybrids of different maturities to the four planting dates was about the same.
3. The earlier planting dates gave the highest average yield in each of the five years the study was conducted.

Figure 1 Average yield in bushels per acre of hybrids reprsenting 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average)

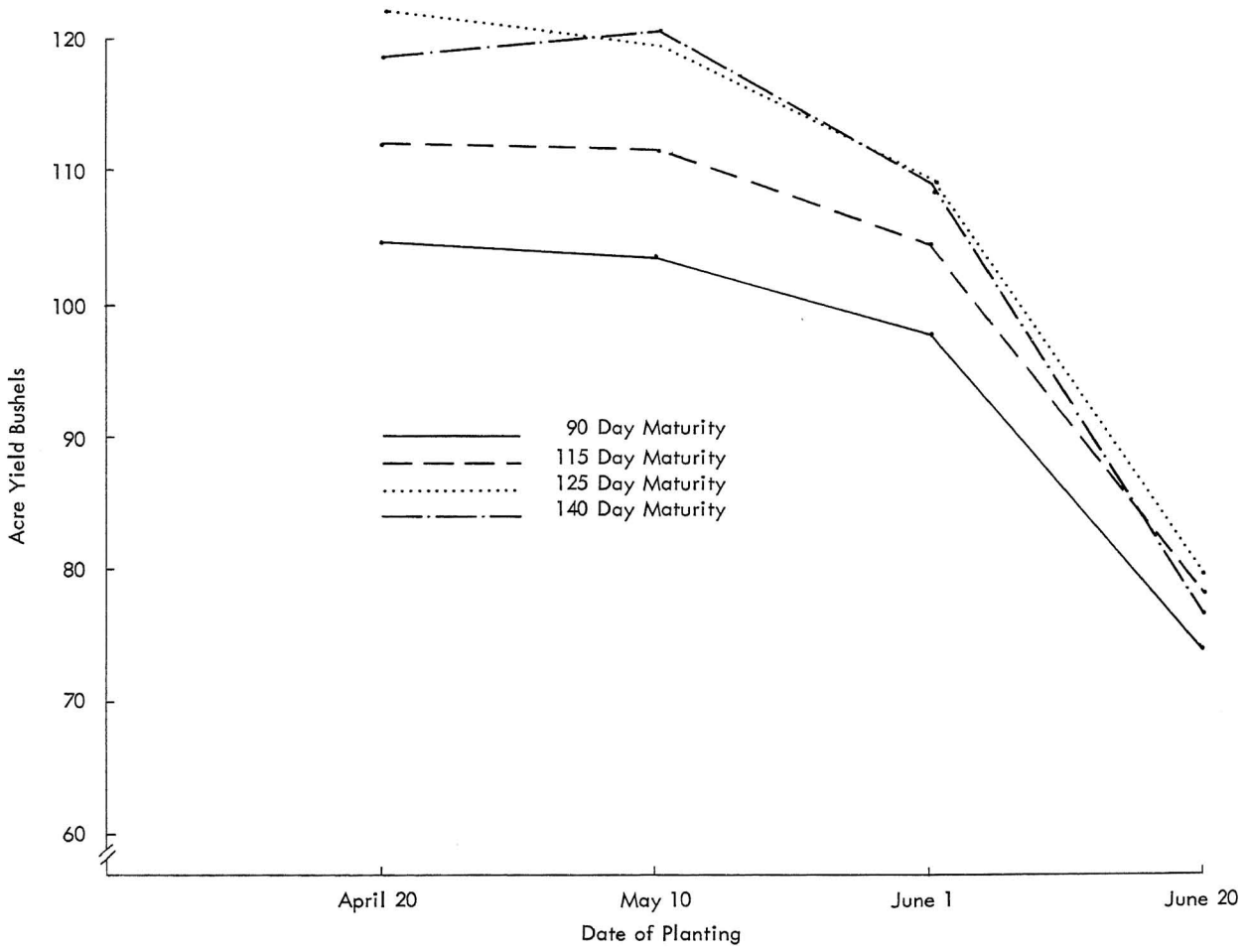


Figure 2 Average yield in bushels per acre for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.

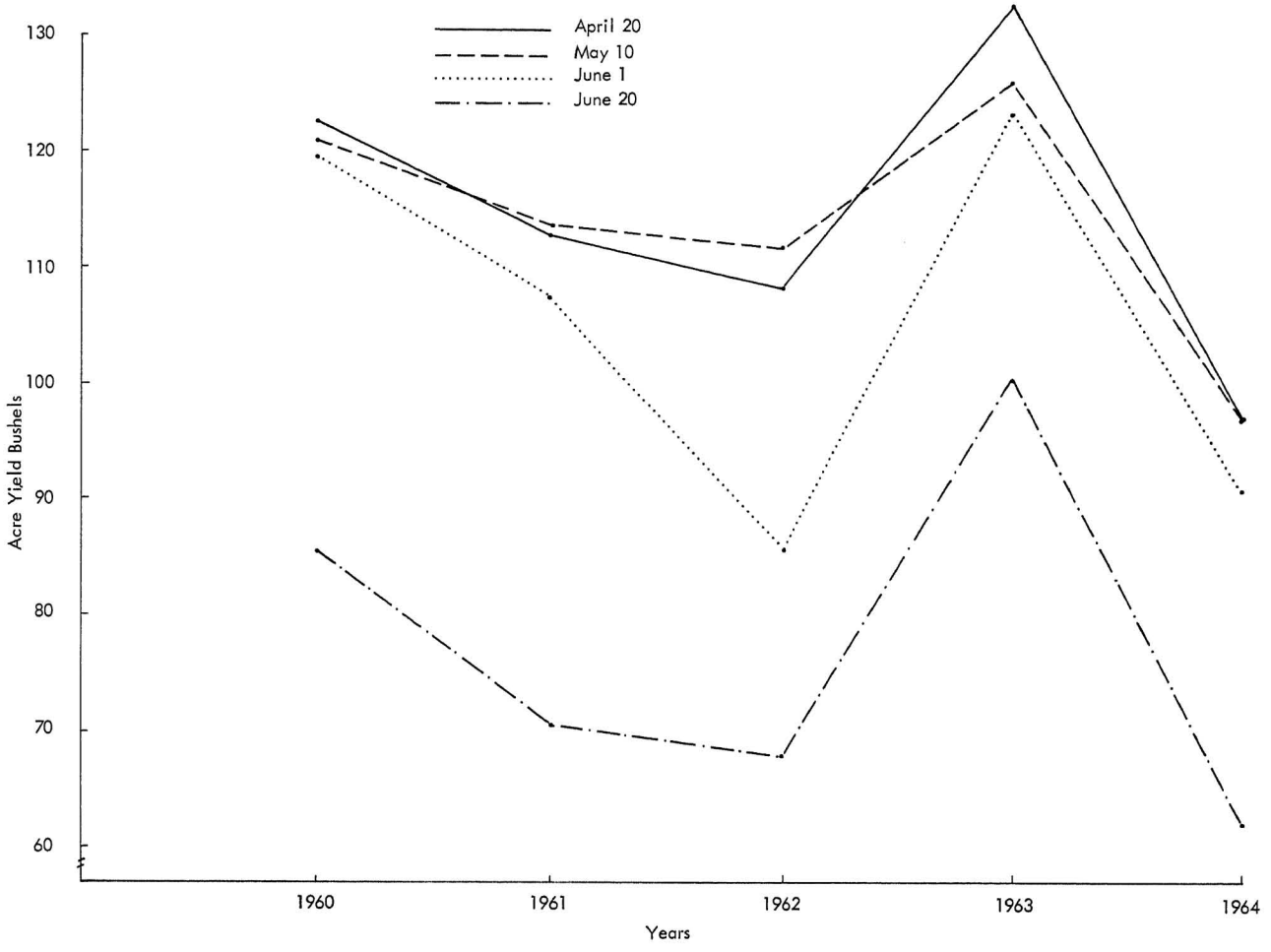
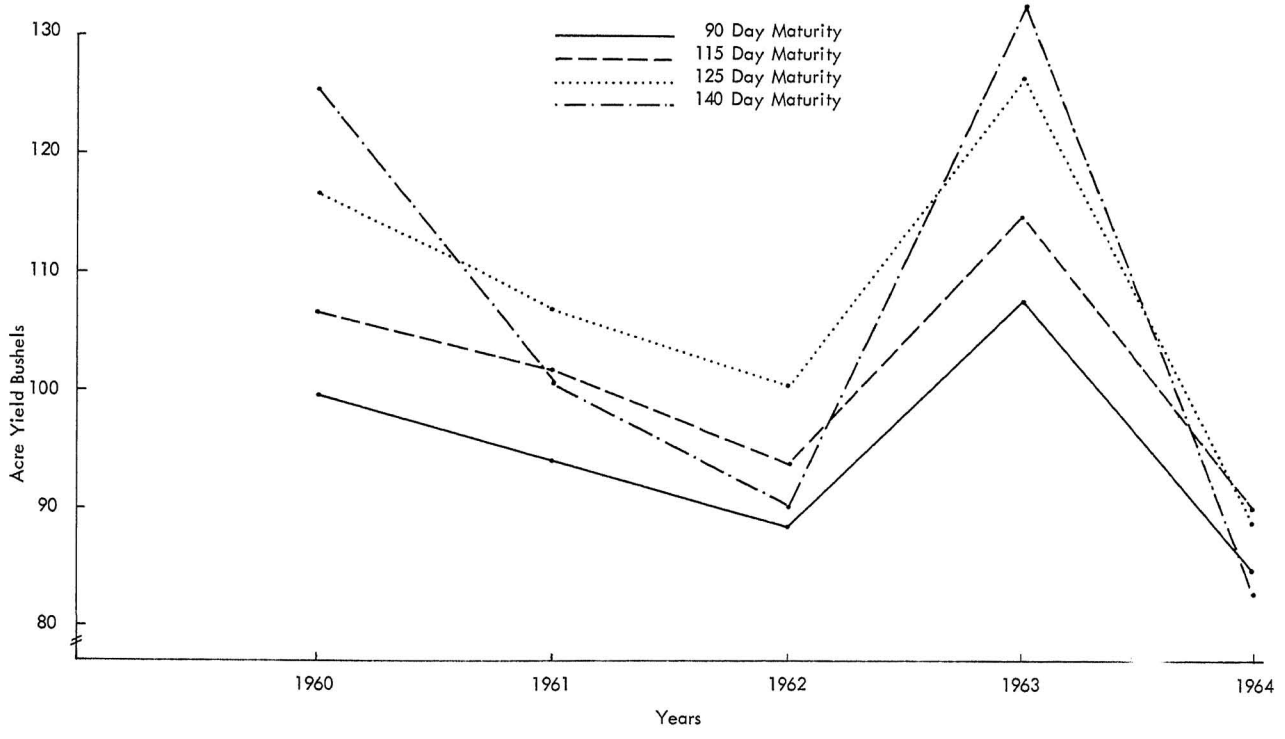


Figure 3 Average yield in bushels per acre of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.



ROOT LODGING

Average percent lodging for the four dates of planting was 3.0, 2.9, 4.4 and 14.9, respectively, for April 20, May 10, June 1, and June 20 (Appendix Table 2). All four maturity groups had the highest root lodging for the June 20 date of planting (Figure 4). That planting date had excessive root lodging in two out of the five years, 1961 and 1962, while root lodging for the other three planting dates was relatively uniform (Figure 5). The 140-day maturity corn had the highest amount of root lodging in all five years.

Conclusions:

1. Root lodging tended to increase after the May 10 planting date and was greatest for the June 20 planting date.
2. Root lodging was highest for the 140-day maturity corn regardless of planting date and least for the 115- and 125-day maturity groups.
3. The earlier planting dates of April 20 and May 10 gave the least number of root-lodged plants in each of the five years.

Figure 4 Average percent root lodging of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average.)

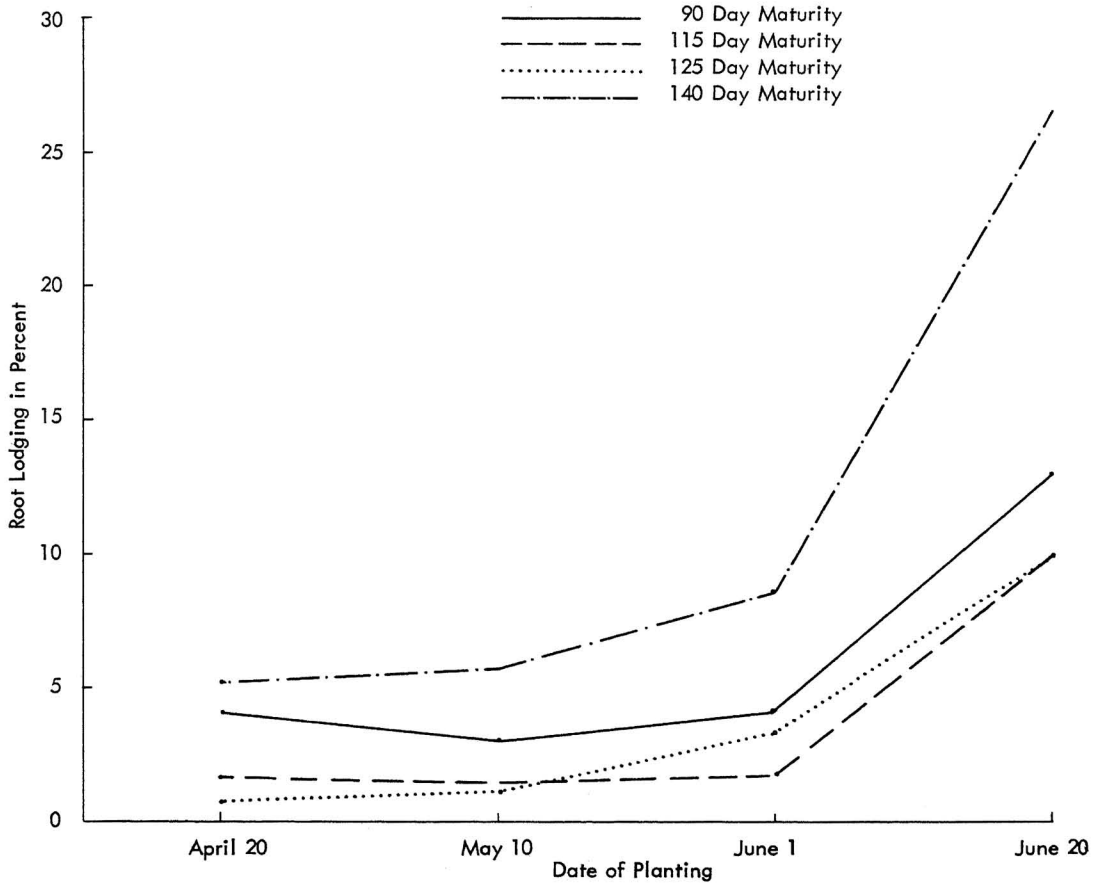


Figure 5 Average root lodging in percent for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.

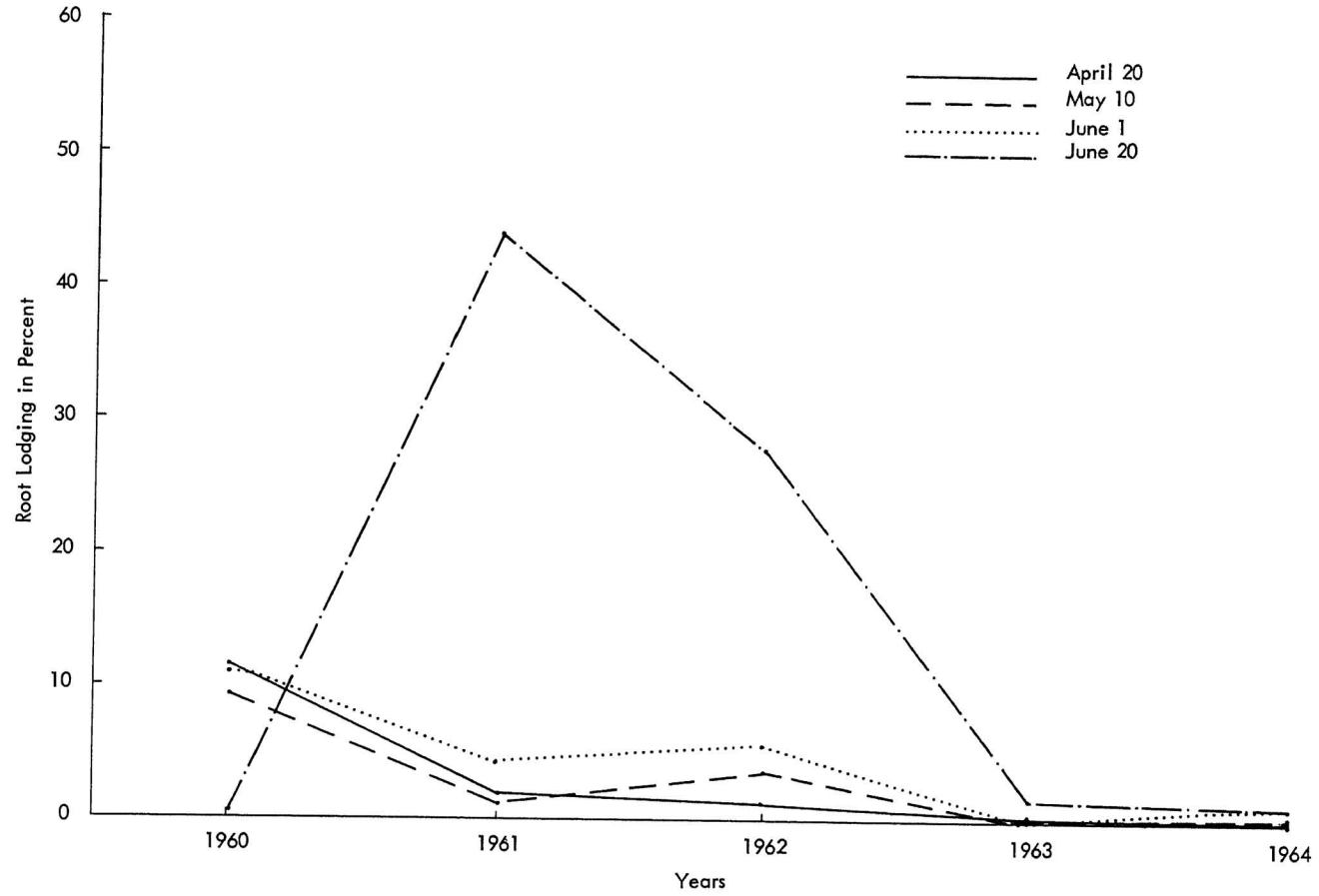
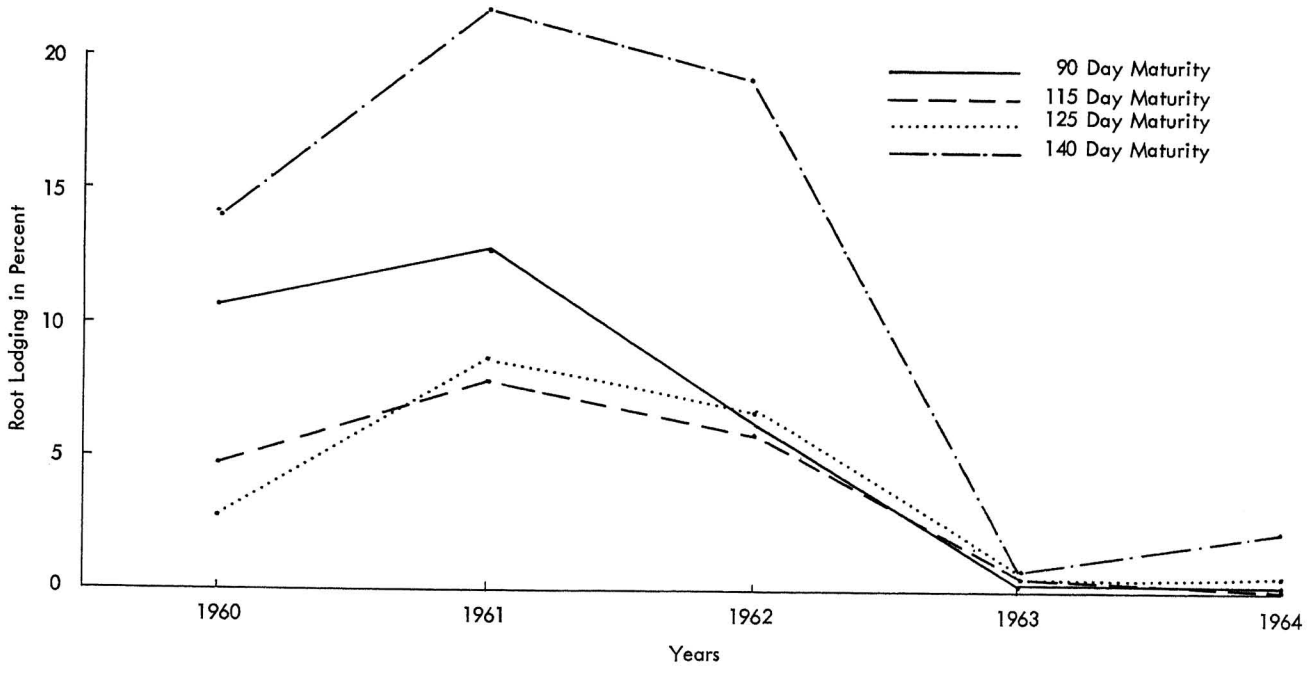


Figure 6 Average root lodging in percent of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.



STALK LODGING

Stalk lodging increased as planting date was delayed (Figure 7). The greatest amount of stalk lodging occurred in 1961 when a high incidence of *Helminthosporium turcicum* leaf blight may have resulted indirectly in high amounts of stalk rot. Even under these conditions the amount of stalk lodging was lowest for the April 20 planting date (Figure 8). The response of hybrids of different maturities was about the same except for the 140-day maturity group in which stalk lodging decreased considerably for the June 20 date (Figure 7). This was probably due to the high amount of root lodging which occurred before the stalk lodging occurred. (Figure 9).

Conclusions:

1. Stalk lodging was lower for the earlier planting dates and gradually became higher as planting date was delayed.
2. Amount of stalk lodging varied over the five-year period with the highest incidence occurring in 1961 when a severe epiphytotic of leaf blight was prevalent.
3. The responses of hybrids of different maturities to different planting dates were about the same except for those of the 140-day maturity group.

Figure 7 Average stalk lodging in percent of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average.)

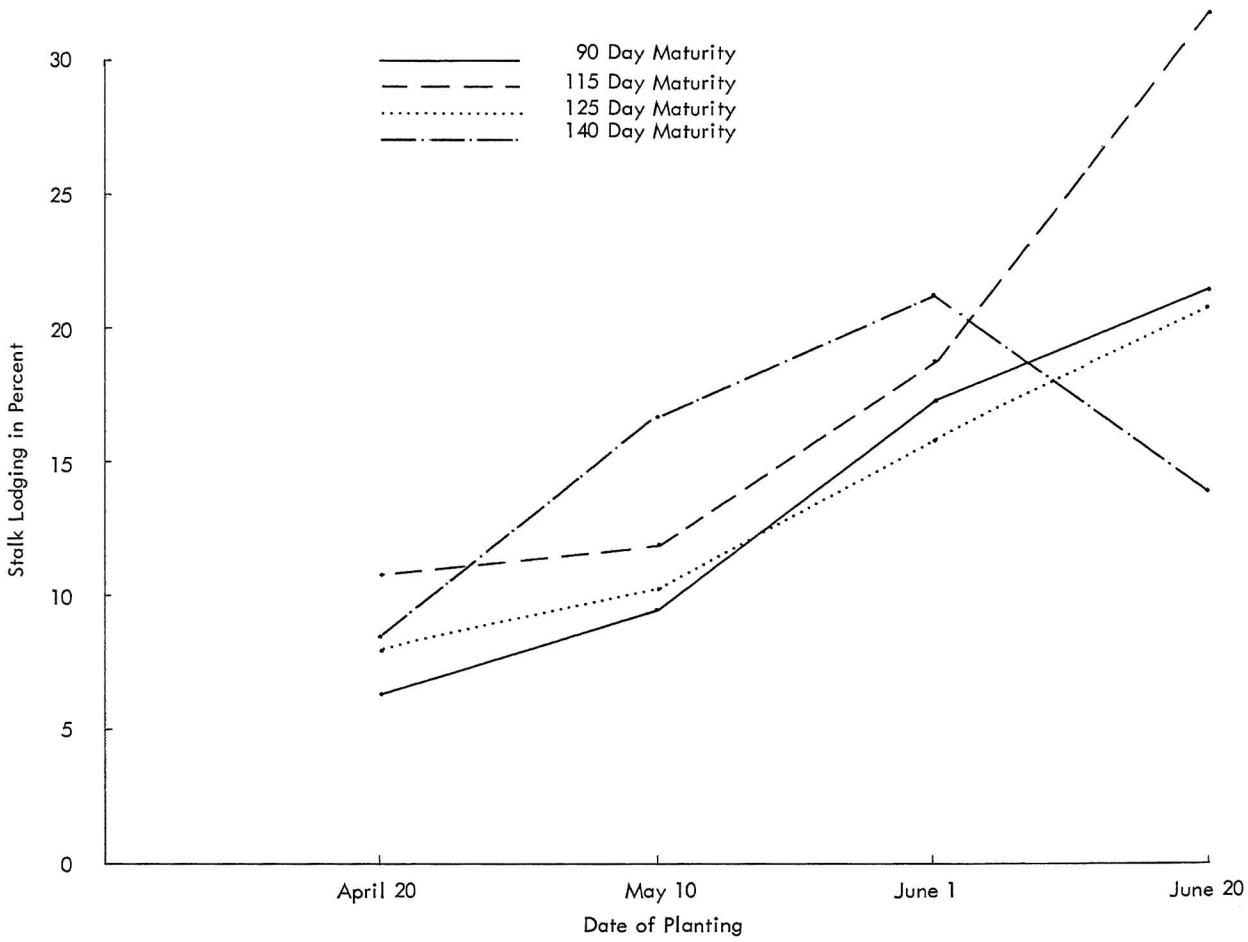


Figure 8 Average stalk lodging in percent for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.

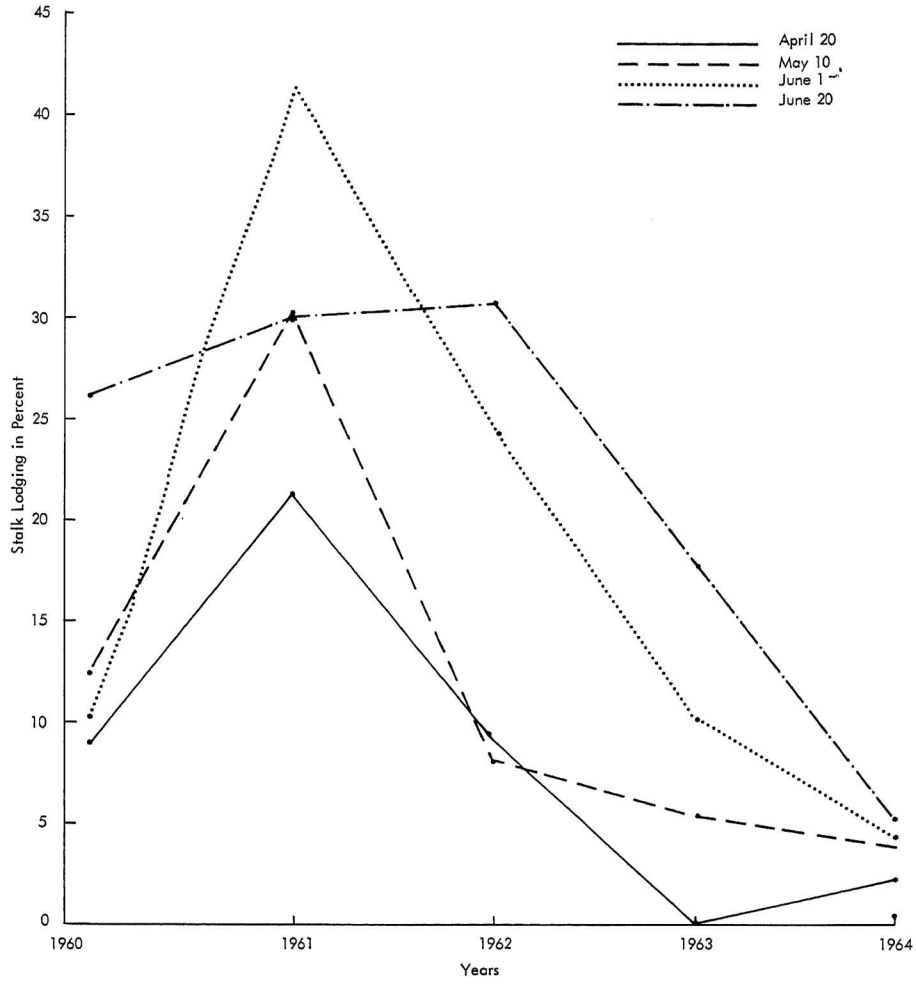
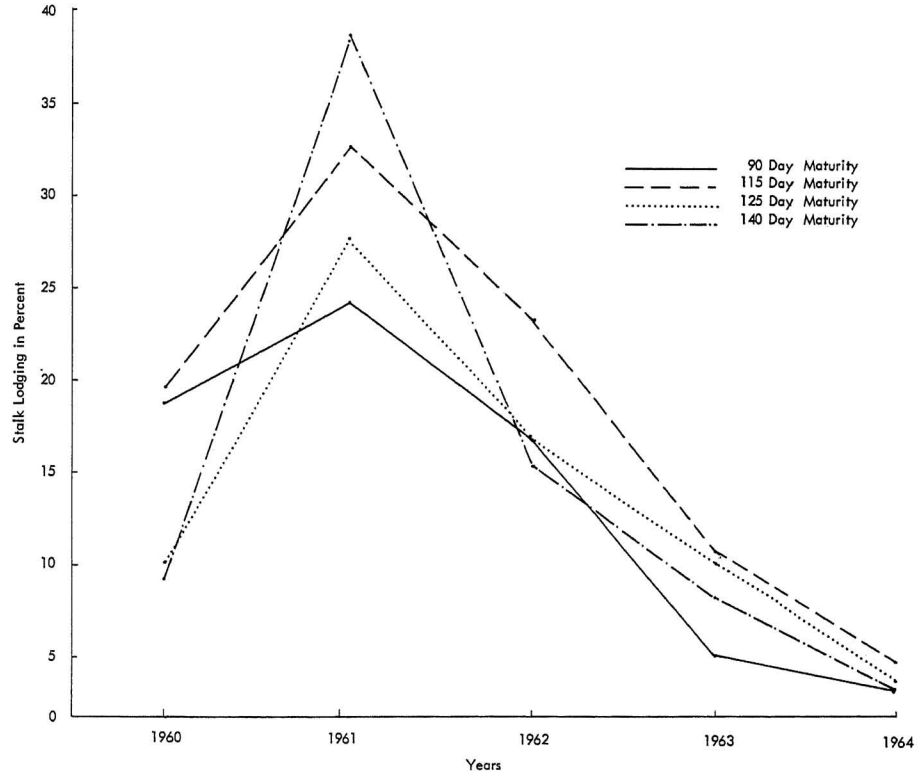


Figure 9 Average stalk lodging in percent for hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.



EAR HEIGHT GRADE

Ear height grade represents the approximate number of feet from the ground to the uppermost ear-bearing node. This character appears to be affected very little by planting date (Figure 10). The four maturity groups responded about the same for the four dates of planting. Planting dates over the five-year period showed little deviation with a slightly higher ear placement occurring in 1961 and 1963 (Figure 11). Ear height grade was lowest for the 90-day maturing group and gradually increased for each later maturing group, terminating with the highest ear height for the 140-day maturity group (Figure 12).

Conclusions:

1. Planting dates showed little effect on ear height grade.
2. Relative ear height grades for planting dates over the five-year period were consistent.
3. Ear height grade was directly associated with maturity groups, and the relationship between maturity groups was consistent for the five years.

Figure 10 Average ear height grade of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average.)

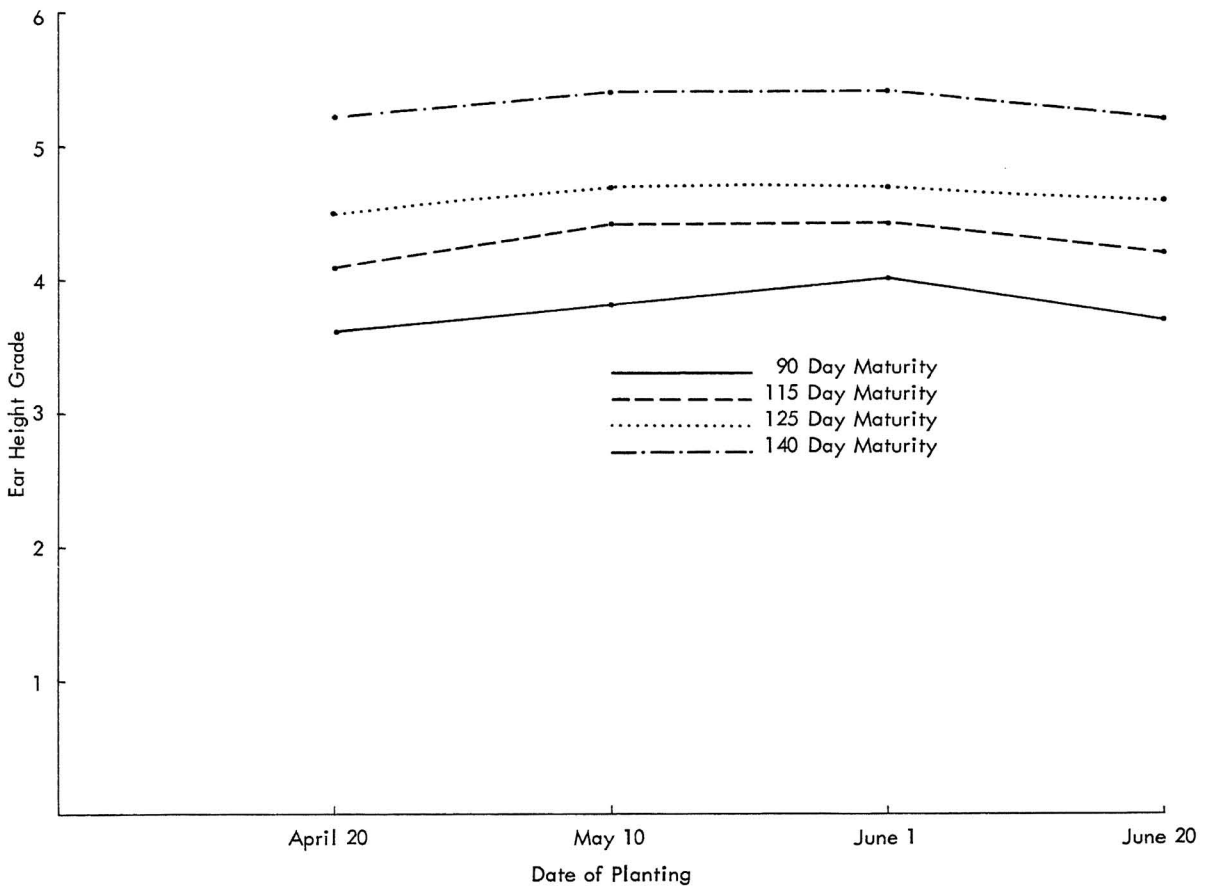
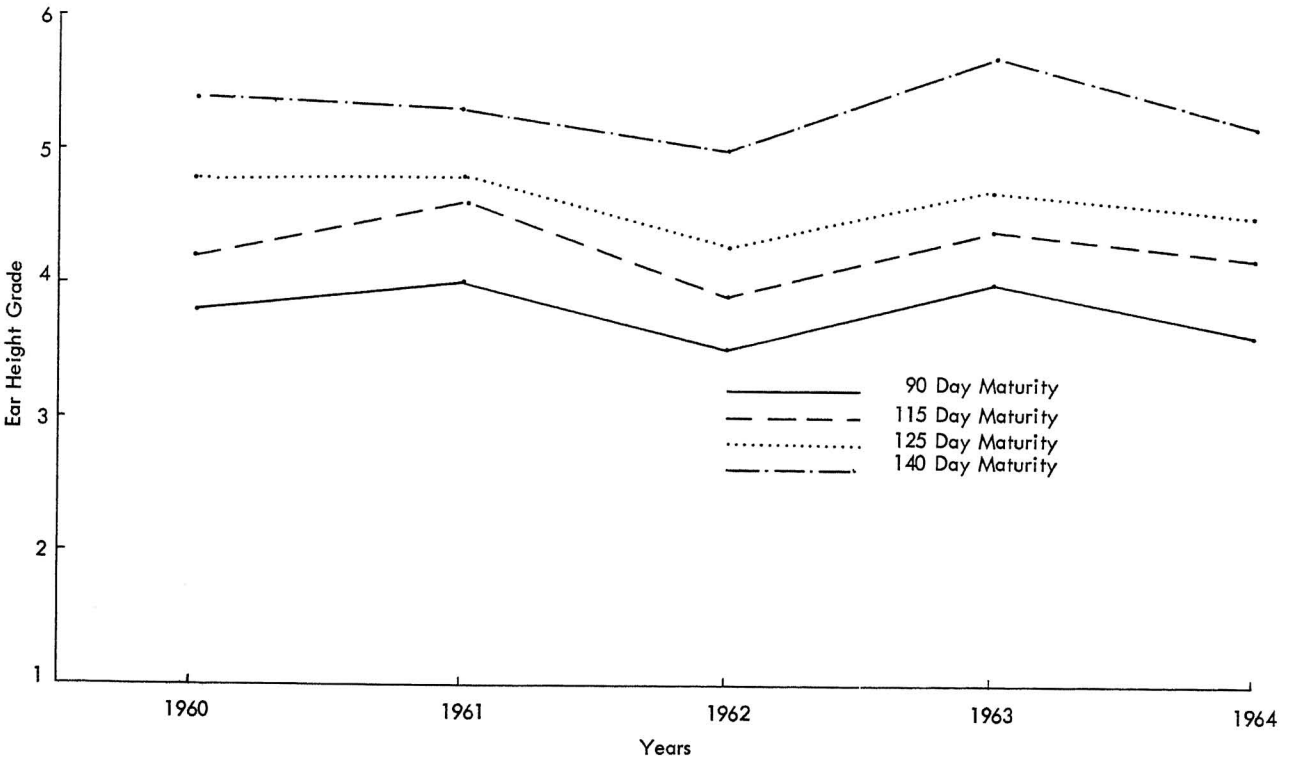


Figure 11 Average ear height grade for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.

Fgiure 12 Average ear height grade of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.



NUMBER OF DAYS FROM PLANTING TO TASSELING

Each plot was recorded as tasseled when approximately 50 percent of the plants had tassels showing anthers. The number of days was calculated by subtracting the planting date from the date of tasseling. Tasseling data were not taken in 1964. The number of days from planting to tasseling was greatest for the April 20 planting date with a mean of 85.2 days, decreasing to 74.3 days for May 10 and 63.6 days for June 1. Little change was noted for the June 20 planting date with 63.9 days. The reaction of the four maturity groups to the four planting dates is illustrated in Figure 13. The range in number of days between the 90-day and 140-day maturity group was 10.0; 8.1; 8.9; and 8.8 days for the April 20, May 10, June 1, and June 20 planting dates, respectively. Number of days from planting to tasseling for the four maturity groups over the four years was relatively consistent (Figure 14). Planting dates over the four years indicated the early planting dates fluctuated more, probably due to the environment of a particular growing season, than did the late ones (Figure 15).

Conclusions:

1. Number of days from planting to tasseling was longest for the earliest planting date (April 20), decreased until the June 1 planting date, and remained the same for June 20.
2. Number of days from planting to tasseling was a good indication of relative maturity groups with the fewest days for the 90-day maturity group and gradually increased through the 115-day to the 140-day maturity group.
3. Number of days from planting to tasseling was about the same for the planting dates within years with a greater fluctuation over the four years for the April 20 planting date.

Figure 13 Average number of days from planting to tasseling of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average.)

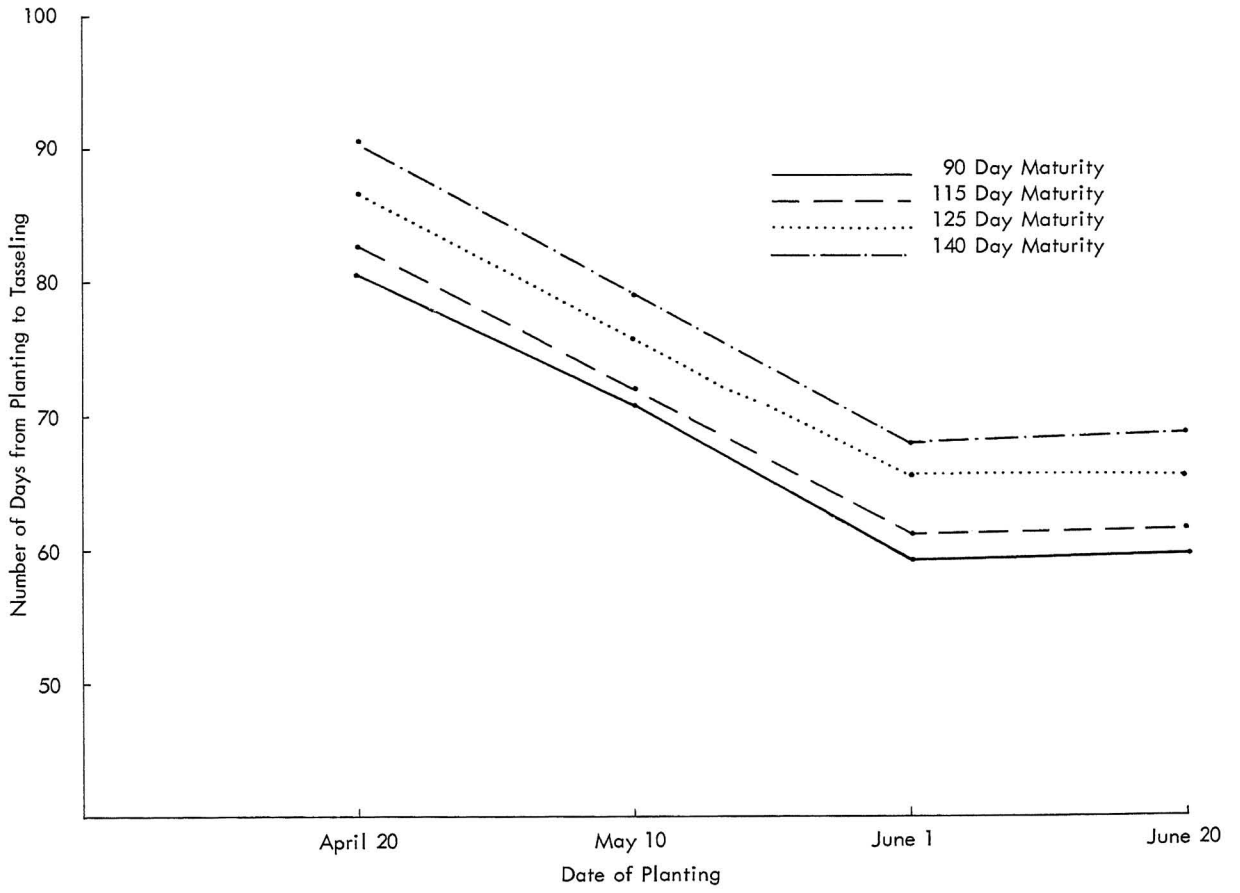


Figure 14 Average number of days from planting to tasseling of hybrids representing 4 maturity groups for each of 4 years. North Missouri Research Center, Spickard, Missouri.

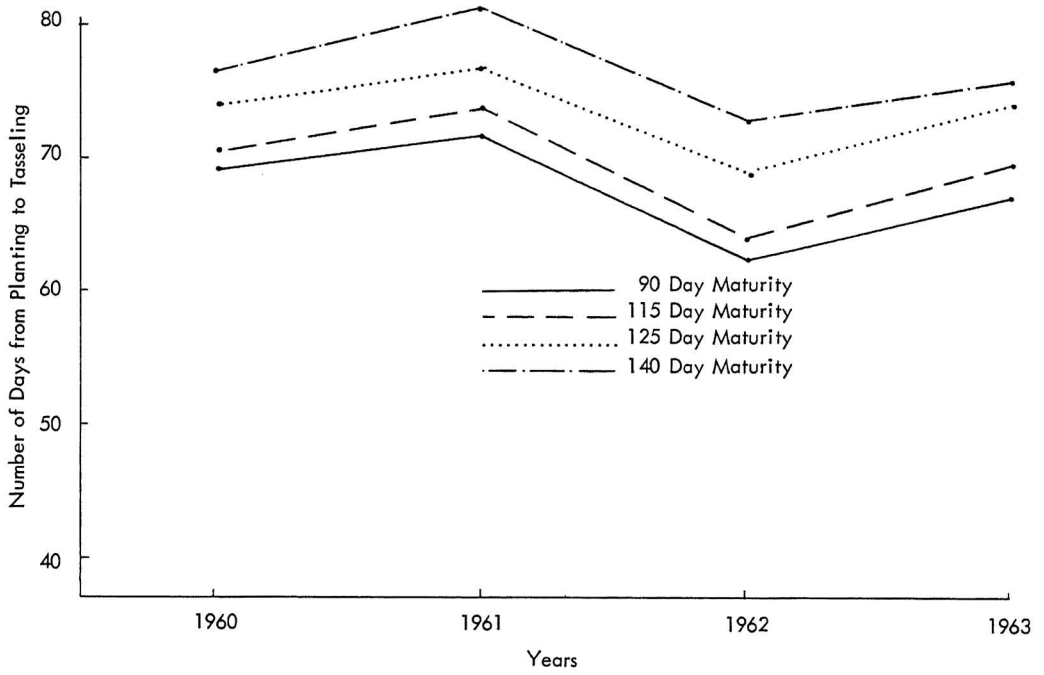
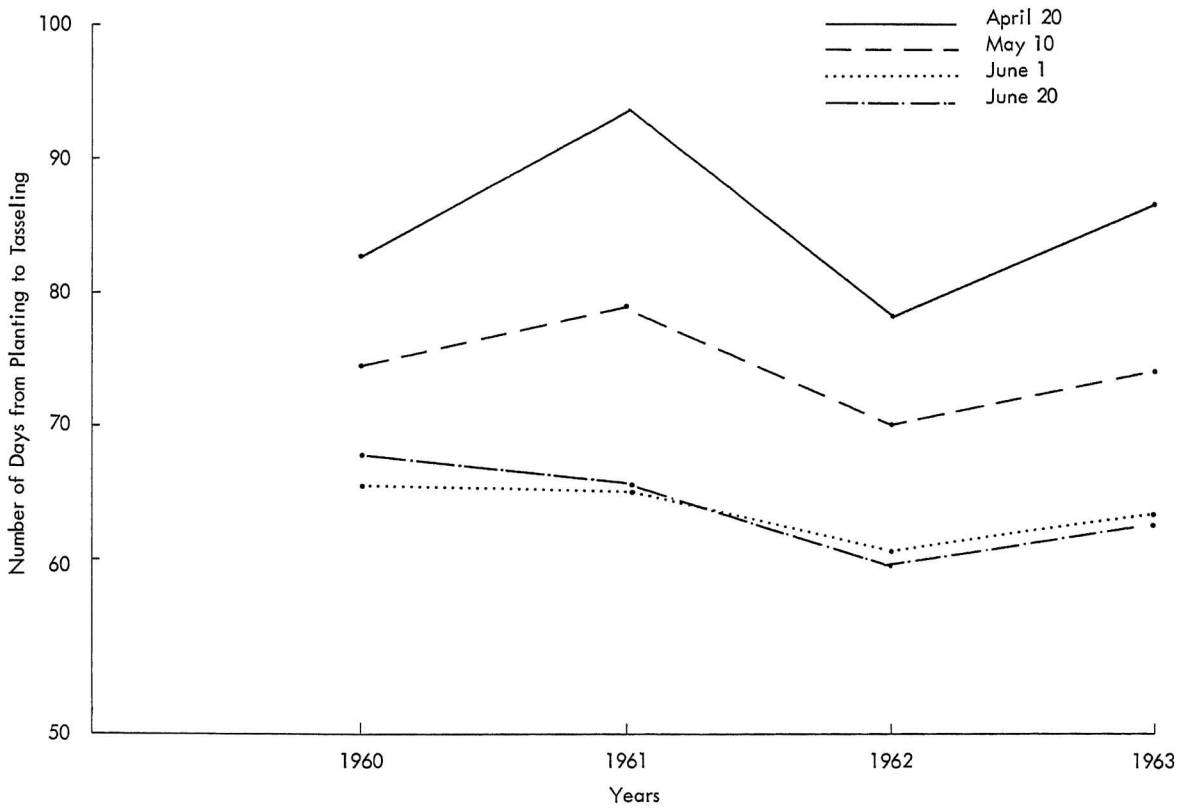


Figure 15 Average number of days from planting to tasseling for 4 dates of planting for each of 4 years. North Missouri Research Center, Spickard, Missouri.



NUMBER OF DAYS FROM PLANTING TO SILKING

Silking data were recorded when 50 percent of the plants in a plot showed silks. The number of days from planting to silking was computed in the same manner as the number of days from planting to tasseling. In general, the number of days from planting to silking followed the same pattern as the number from planting to tasseling (Figures 16, 17, and 18). The number of days difference between tasseling and silking was 3.4; 3.5; 4.0 and 3.1 for the April 20, May 10, June 1, and June 20 planting dates, respectively. Differences between tasseling and silking dates were largest in 1962 with 4.1 days and least in 1961 with 3.0 days. Differences for the 90-, 115- and 120-day maturity groups were about the same at 3.3 days while the difference for the 140-day was somewhat greater with 4.1 days (Appendix Tables 5 and 6).

Conclusions:

1. Number of days from planting to silking followed about the same pattern as for number of days from planting to tasseling.
2. Smallest difference between tasseling and silking was noted for the June 20 planting date.
3. Differences between tasseling and silking were greatest for the 140-day maturity group and about the same for the other three maturity groups.
4. Differences between tasseling and silking were greatest in 1962 and least in 1961.

Figure 16 Average number of days from planting to silking of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri.

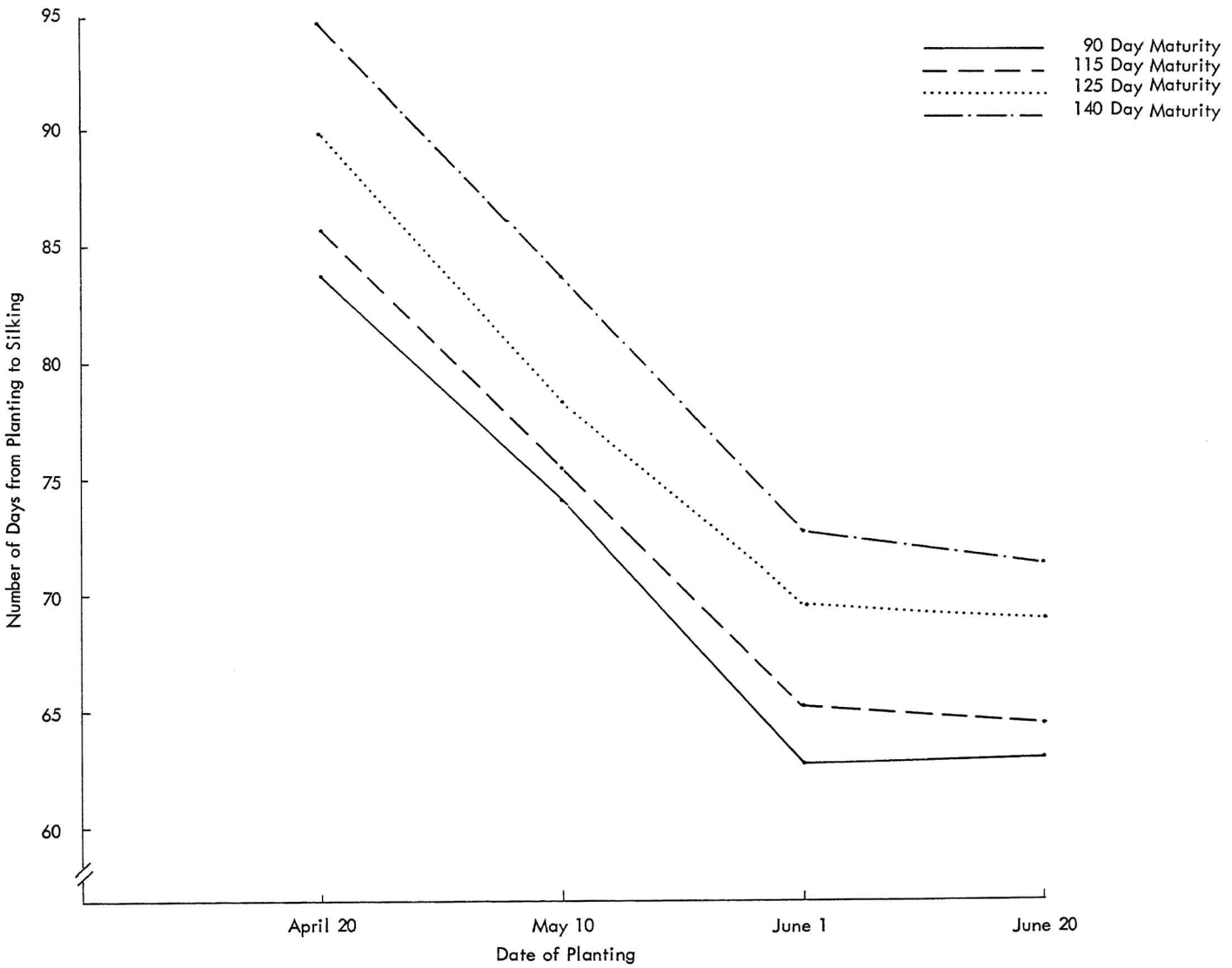


Figure 17 Average number of days from planting to silking of hybrids representing 4 maturity groups for each of 4 years. North Missouri Research Center, Spickard, Missouri.

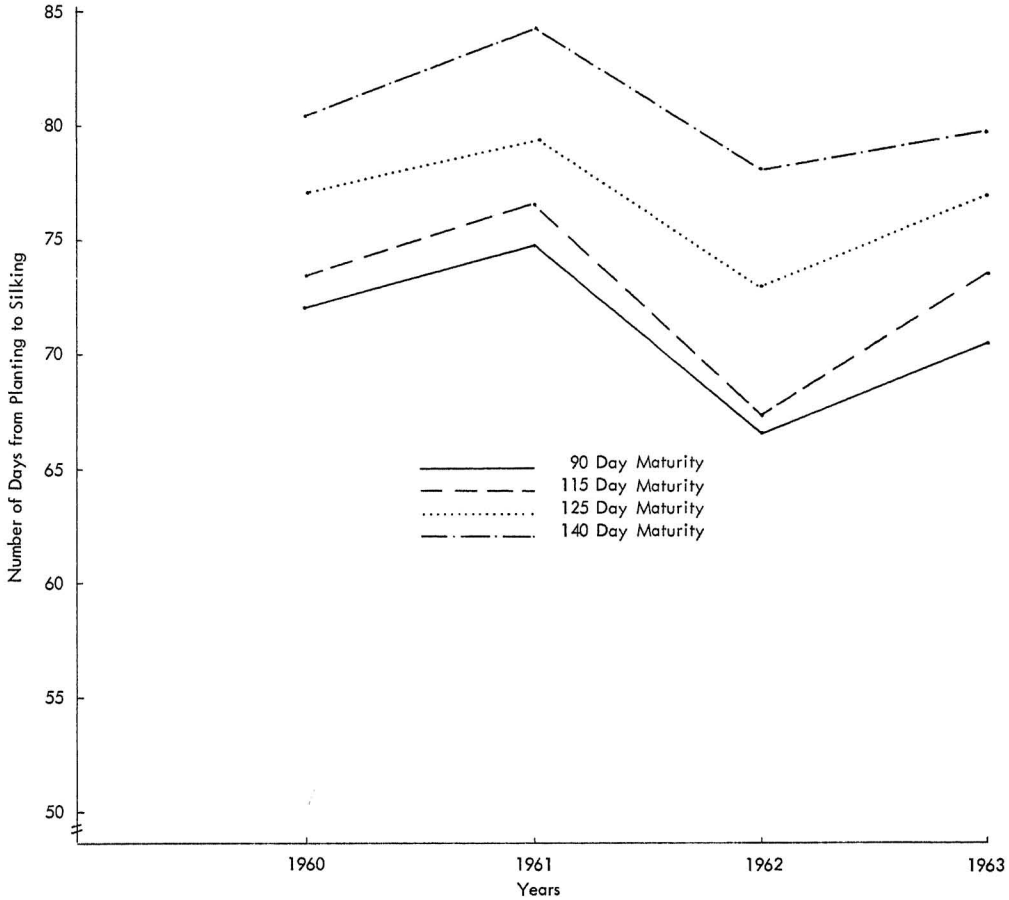
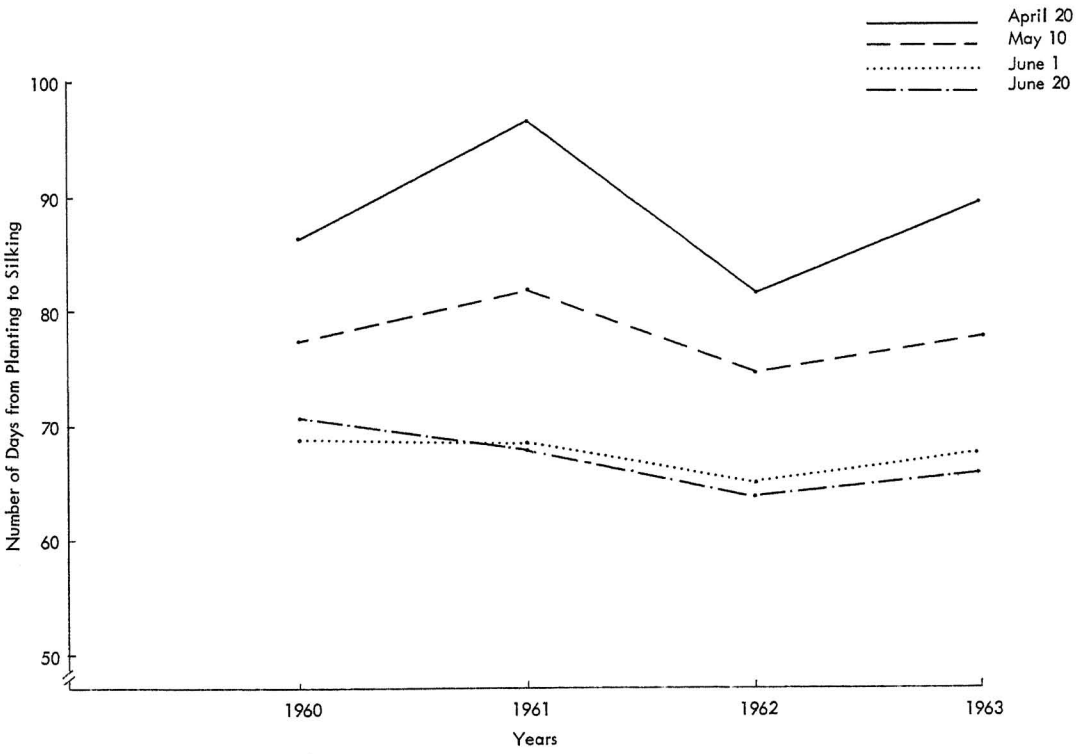


Figure 18 Average number of days from planting to silking for 4 dates of planting over a 4 year period. North Missouri Research Center, Spickard, Missouri.



SHELLING PERCENTAGE

Shelling percentages were determined on a uniform basis by drying the ear corn from each plot to approximately 8 percent moisture before shelling. Weight of the shelled corn was determined by subtracting the weight of the cobs from weight of the ear corn. Shelling percentage was computed by dividing the shelled corn by weight of the ear corn and multiplying by 100.

Only small differences in shelling percentage were noted between planting dates (Figure 19), maturity groups (Figure 20), or years (Figure 21). The April 20 planting date had the highest shelling percentage with 84.1 percent; the June 20 date had the lowest with 81.4 percent. Shelling percentage for different years ranged from a low of 82.5 percent in 1964 to a high of 84.0 percent in 1963. The 90-day maturity group with 84.2 percent had the highest shelling percentage and the 115-day, the lowest with 82.3 percent.

Conclusions:

1. Shelling percentages were affected very little by planting dates, maturity groups, and different years.

Figure 19 Average shelling percent of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri. (Five year average.)

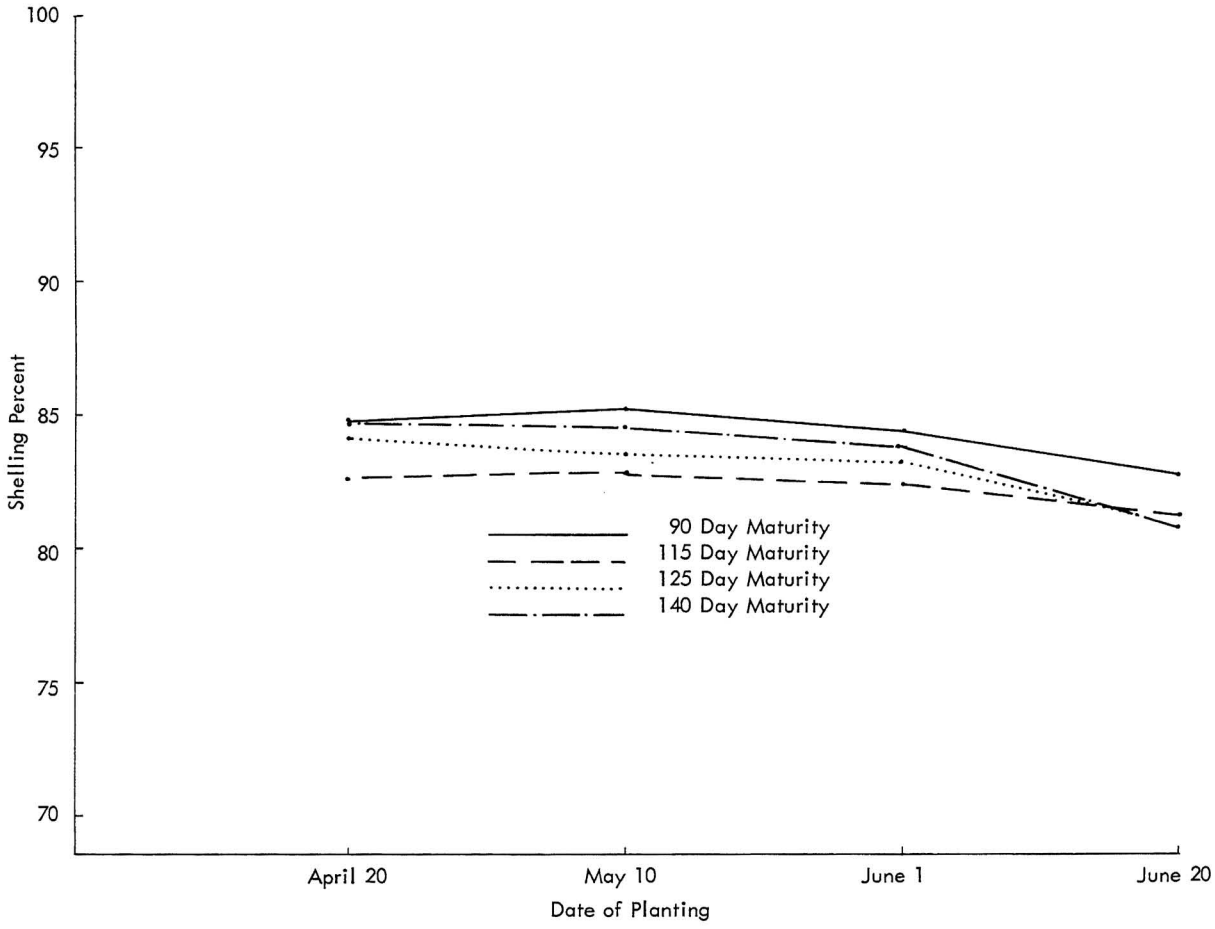


Figure 20 Average shelling percent of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.

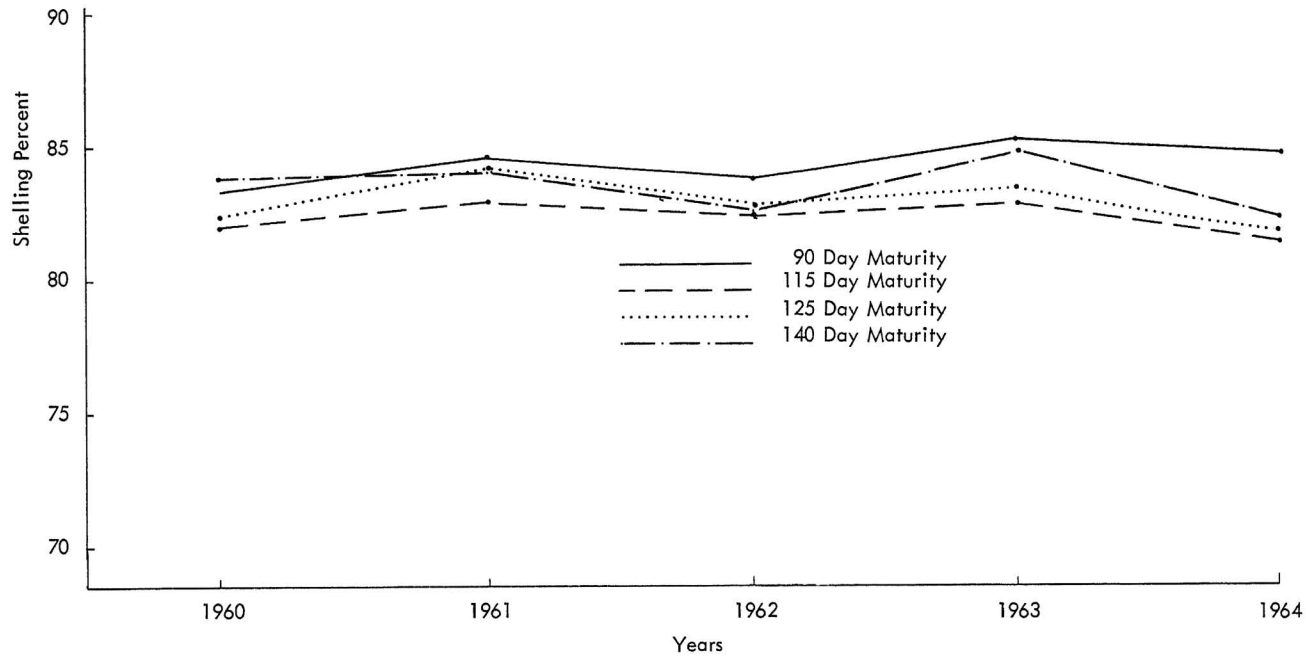
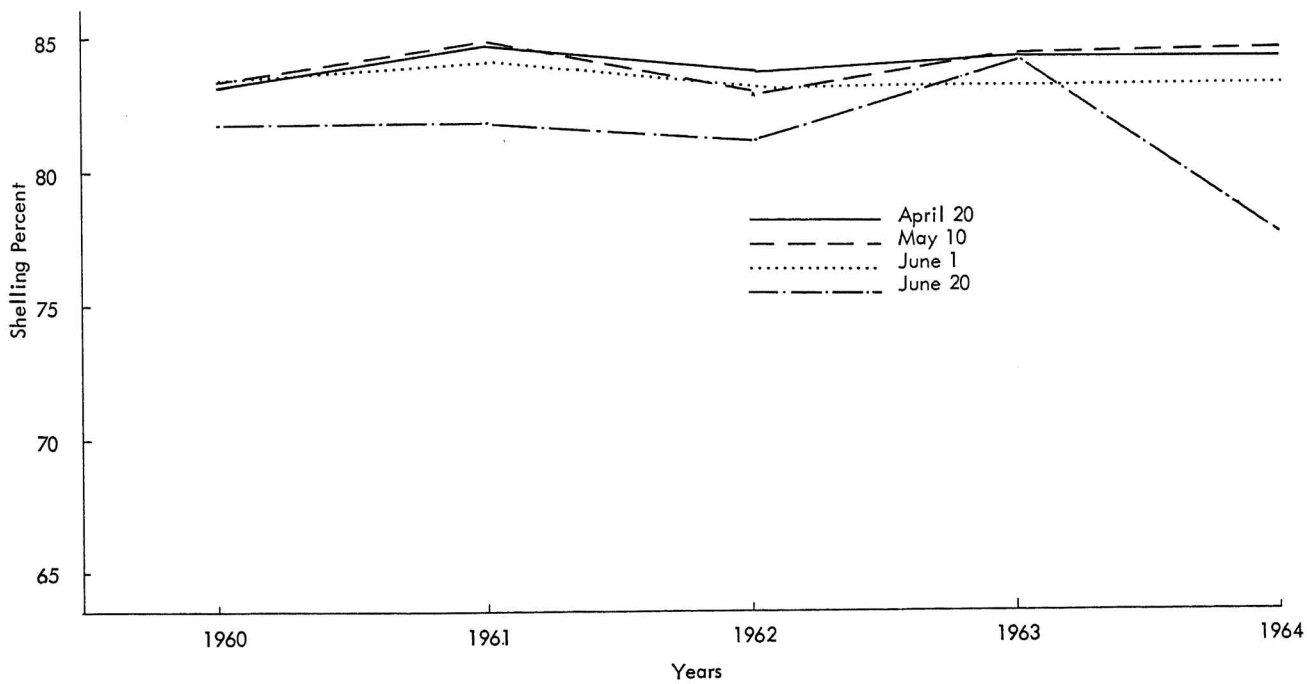


Figure 21 Average shelling percent for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.

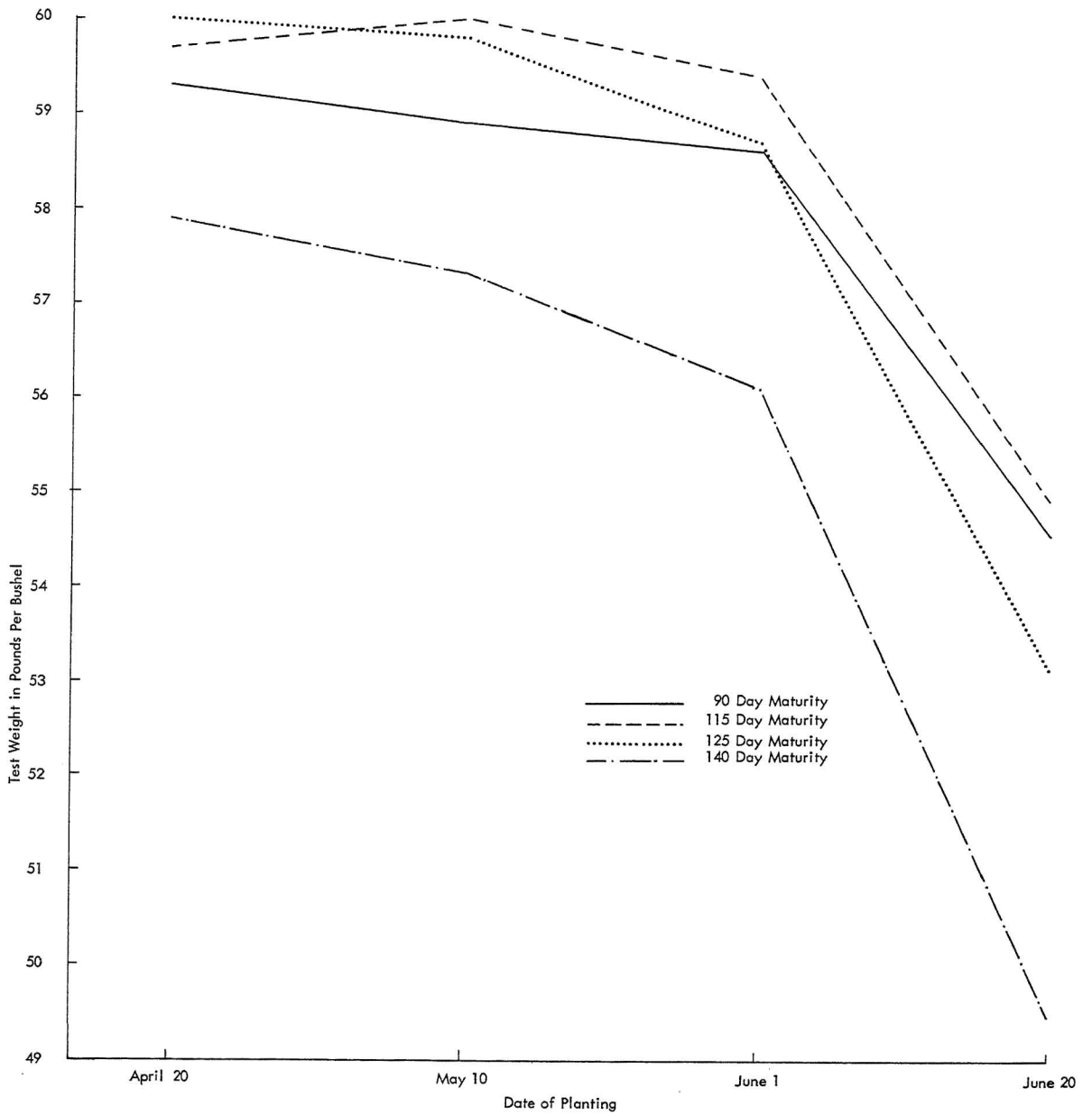


BUSHEL TEST WEIGHT

Test weight per bushel was determined at the time shelling percentages were taken. Test weights were made when the corn contained approximately 8.0 percent moisture.

Test weight was highest for the April 20 planting date with 59.2 pounds per bushel and declined for succeeding planting dates reaching a low of 53.0 pounds for the June 20 planting date (Appendix Table 8). The four maturity groups responded relatively the same to different planting dates (Figure 22). The 115-day maturity group had the highest average test weight while the unadapted 140-day maturity group had the lowest test weight with 55.2 pounds. Over the five-year period when these tests were conducted the 140-day maturity group had the lowest test weight each year while only small differences were found among the remaining three maturity groups (Figure 23). Test weights for the

Figure 22 Average test weight in pounds per bushel of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri.



four planting dates over the five-year period were somewhat more erratic (Figure 24). The June 20 planting date was the lowest in each of the five years. Little difference was noted among the remaining three planting dates with the exception of 1964 when the test declined for the June 1 planting date.

Conclusions:

1. Bushel test weight was highest for the early planting dates and lowest for the June 20 planting date.
2. The unadapted 140-day maturity group had the lowest test weight while only small differences were noted for the other maturity groups.
3. Test weights for maturity groups and planting dates were relatively the same for each of the five years.

Figure 23 Average test weight in pounds per bushel of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.

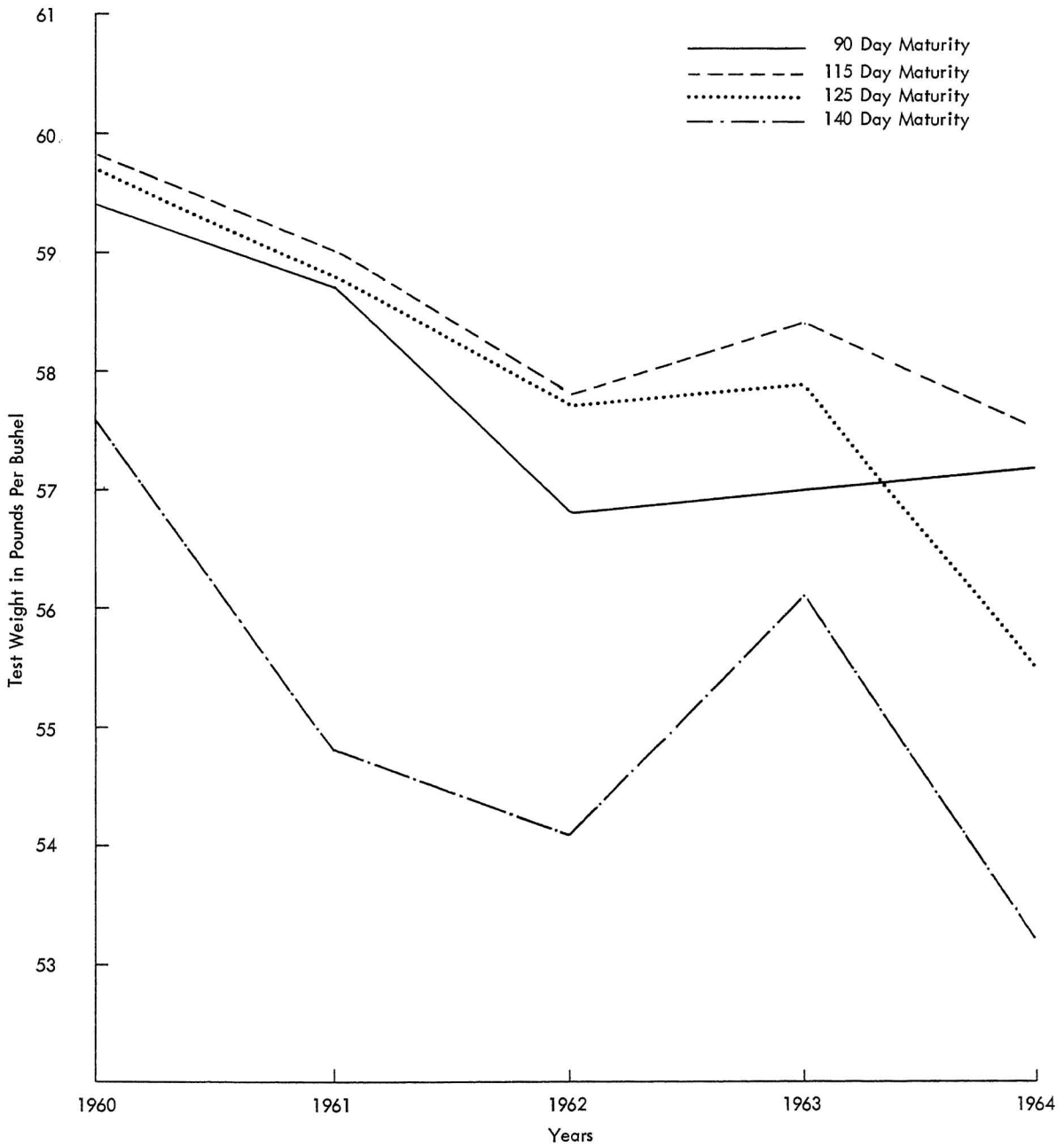
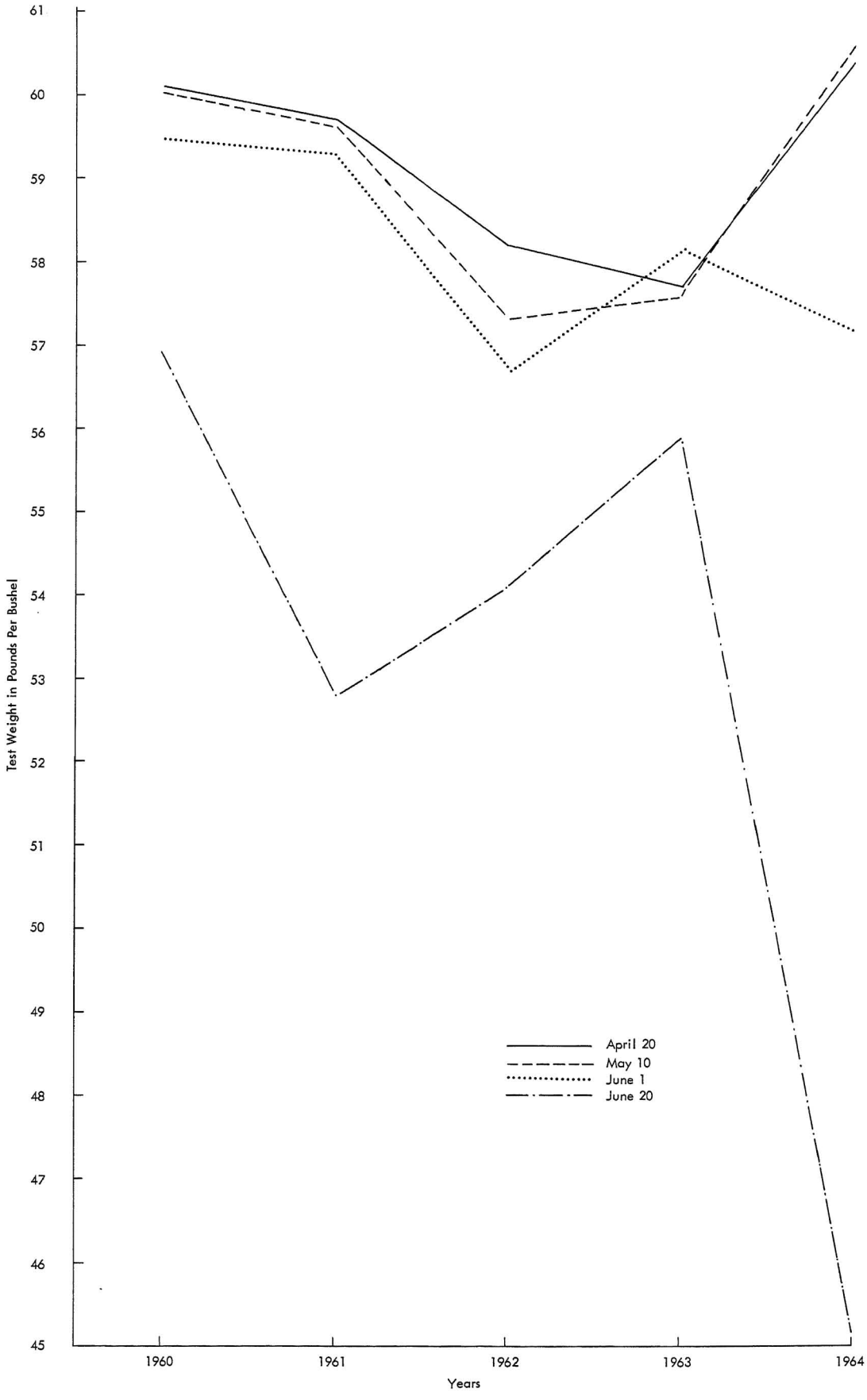


Figure 24 Average test weight in pounds per bushel for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.



EARWORM PENETRATION GRADE

Harvested ears from each plot were rated for earworm damage by measuring the depth of penetration on a scale from 1 (little) to 5 (high). The grade represents the average for all ears of each plot.

Earworm damage increased as planting date was delayed. The April 20 date had the lowest with 2.4 and the June 20 date the highest with 3.7 (Appendix Table 9). The highest earworm damage occurred in 1960 and the least in 1961. Very little difference in earworm damage was noted among the four maturity groups. The four maturity groups had relatively the same amount of damage for the four planting dates (Figure 25) and each of the five years (Figure 26). Earworm damage for planting dates over the five-year period appeared to be more erratic (Figure 27); however, the June 20 planting was highest in three of five years.

Conclusions:

1. Earworm damage increased as planting dates were delayed with the April 20 and May 10 planting dates showing the least damage.
2. Earworm damage ranged from a low of 1.7 in 1961 to a high of 4.5 in 1960.
3. Little difference in earworm damage was found among the four maturity groups included in this test.

Figure 25 Average earworm penetration grade of hybrids representing 4 maturity groups planted at 4 dates. North Missouri Research Center, Spickard, Missouri.

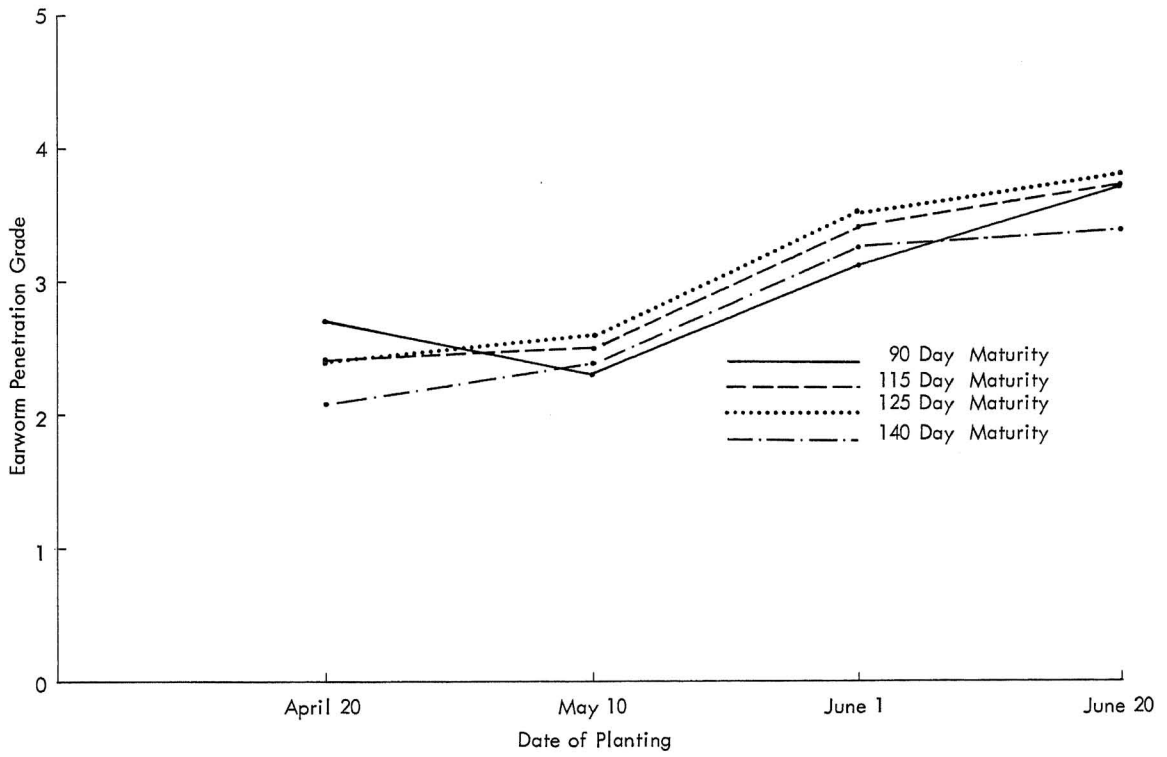


Figure 26 Average earworm penetration grade of hybrids representing 4 maturity groups for each of 5 years. North Missouri Research Center, Spickard, Missouri.

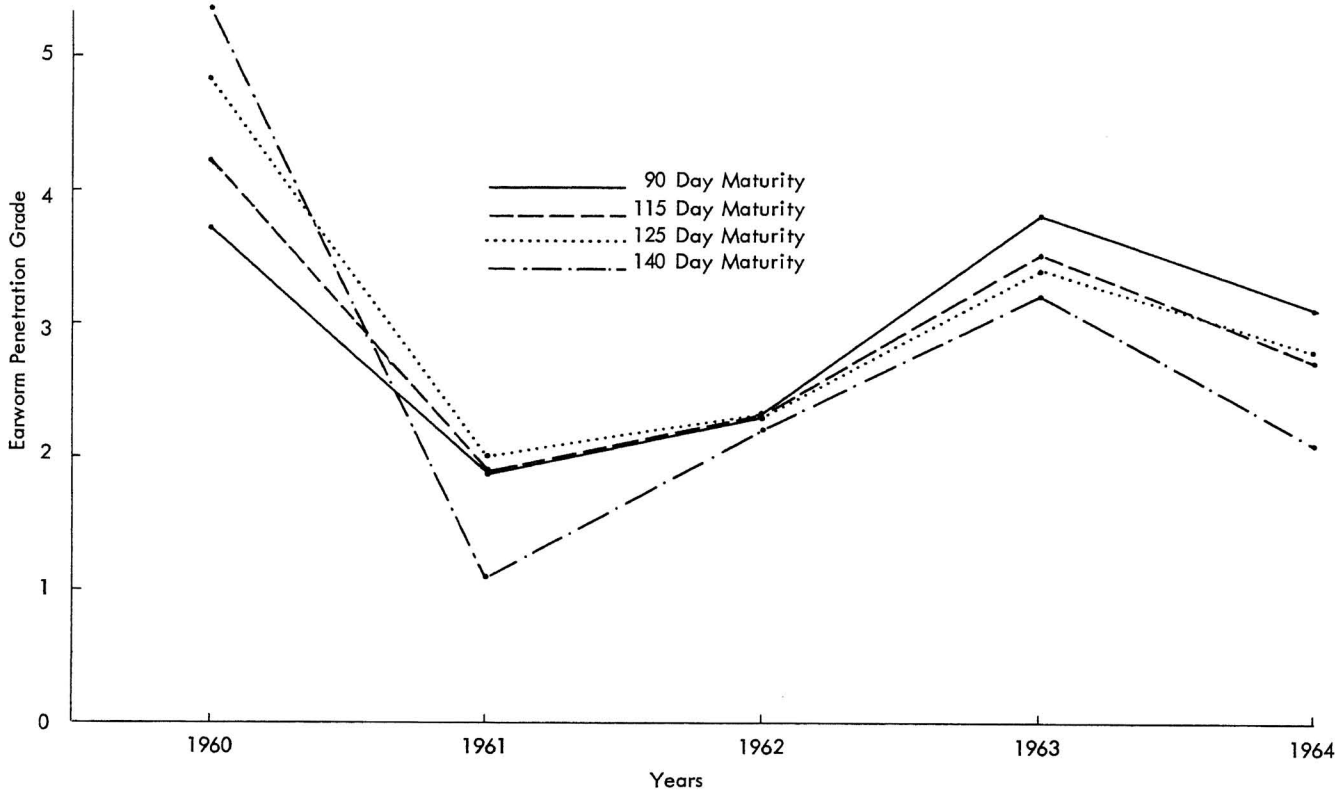
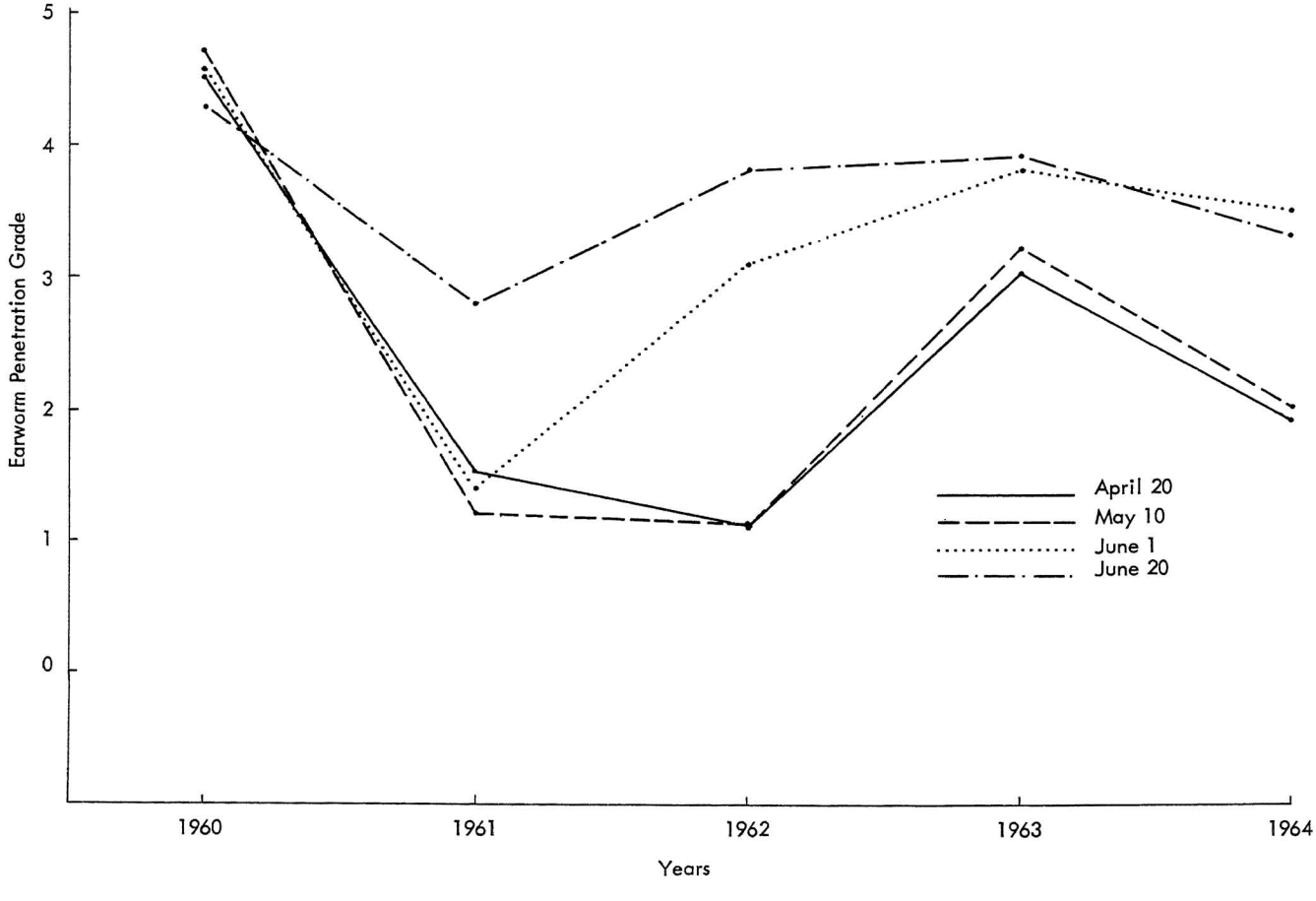


Figure 27 Average earworm penetration grade for 4 dates of planting for each of 5 years. North Missouri Research Center, Spickard, Missouri.



APPENDIX

TABLE 1--FIVE-YEAR SUMMARY OF AVERAGE YIELD IN BUSHELS PER ACRE FOR DATES-OF-PLANTING STUDY (1960-1964)*
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	104.9	103.1	97.6	73.7
115-day	112.0	111.2	104.1	78.0
125-day	122.0	119.5	109.8	79.9
140-day	118.6	120.3	109.4	76.8
Mean	114.4	113.5	105.2	77.1

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	122.4	112.4	108.0	132.0	97.0
May 10	120.8	113.4	111.2	125.4	96.7
June 1	119.5	107.5	85.5	123.3	90.2
June 20	85.1	70.3	67.9	100.3	61.9
Mean	112.0	100.9	93.2	120.3	86.5

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	99.5	106.5	116.6	125.2
1961	94.0	101.8	106.9	100.8
1962	88.4	93.8	100.3	90.1
1963	107.4	114.8	126.3	132.6
1964	84.9	89.6	88.8	82.4
Mean	94.8	101.3	107.8	106.2

TABLE 2--FIVE-YEAR SUMMARY OF AVERAGE ROOT LODGING FOR DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	4.1	3.1	4.1	13.0
115-day	1.6	1.5	1.8	10.0
125-day	0.9	1.3	3.3	10.0
140-day	5.3	5.8	8.5	26.6
Mean	3.0	2.9	4.4	14.9

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	11.7	2.0	1.1	0.1	0.0
May 10	9.2	1.2	3.7	0.0	0.5
June 1	11.1	4.3	5.5	0.0	1.4
June 20	0.1	43.8	27.5	1.8	1.3
Mean	8.0	12.8	9.5	0.5	0.8

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	10.6	4.6	2.9	14.0
1961	12.9	7.9	8.6	21.9
1962	6.2	5.8	6.8	19.0
1963	0.3	0.4	0.5	0.6
1964	0.3	0.0	0.6	2.2
Mean	6.1	3.7	3.9	11.5

TABLE 3--FIVE-YEAR SUMMARY OF AVERAGE STALK LODGING
FOR DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	6.3	9.5	17.2	21.5
115-day	10.7	11.8	18.5	31.8
125-day	8.2	10.2	15.6	20.8
140-day	8.5	16.6	21.1	13.9
Mean	8.4	12.0	18.1	22.0

Planting Dates	Year				
	1960	1961	1962	1963	1964
Apr. 20	8.8	21.2	9.0	1.0	2.1
May 10	12.4	30.3	8.1	5.4	3.8
June 1	10.4	41.6	24.4	10.1	4.1
June 20	26.2	30.0	30.7	17.8	5.2
Mean	14.5	30.8	18.1	8.6	3.8

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	18.7	19.6	10.1	9.3
1961	24.2	32.6	27.7	38.6
1962	16.9	23.1	16.9	15.4
1963	5.1	10.7	10.0	8.4
1964	3.3	4.9	3.7	3.3
Mean	13.6	18.2	13.7	15.0

TABLE 4--FIVE-YEAR SUMMARY OF AVERAGE EAR HEIGHT GRADE
FOR DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	3.6	3.8	4.0	3.7
115-day	4.1	4.4	4.4	4.2
125-day	4.5	4.7	4.7	4.6
140-day	5.2	5.4	5.4	5.2
Mean	4.4	4.6	4.6	4.4

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	4.5	4.4	3.9	4.7	4.2
May 10	4.7	4.8	4.0	4.9	4.5
June 1	4.6	5.0	4.3	4.7	4.5
June 20	4.3	4.6	4.4	4.6	4.4
Mean	4.5	4.7	4.2	4.7	4.4

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	3.8	4.2	4.8	5.4
1961	4.0	4.6	4.8	5.3
1962	3.5	3.9	4.3	5.0
1963	4.0	4.4	4.7	5.7
1964	3.6	4.2	4.5	5.2
Mean	3.8	4.3	4.6	5.3

TABLE 5--FOUR-YEAR SUMMARY OF AVERAGE NUMBER OF DAYS FROM PLANTING TO TASSELING FOR THE DATES-OF-PLANTING STUDY (1960-1963)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	80.6	70.8	59.2	59.8
115-day	82.6	72.1	61.2	61.6
125-day	86.8	75.3	65.8	65.6
140-day	90.6	78.9	68.1	68.6
Mean	85.2	74.3	63.6	63.9

Planting Dates	Year			
	1960	1961	1962	1963
Apr. 20	82.7	93.6	78.0	86.4
May 10	74.2	78.9	70.0	74.0
June 1	65.2	65.0	60.4	63.8
June 20	67.7	65.6	59.8	62.5
Mean	72.5	75.8	67.1	71.7

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	69.1	70.2	74.1	76.4
1961	71.8	73.6	76.6	81.1
1962	62.3	64.0	69.0	72.9
1963	67.2	69.6	73.9	75.9
Mean	67.2	69.4	73.4	67.6

TABLE 6--FOUR-YEAR SUMMARY OF AVERAGE NUMBER OF DAYS FROM PLANTING TO SILKING FOR THE DATES-OF-PLANTING STUDY (1960-1963)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	83.8	74.0	62.9	63.0
115-day	85.8	75.2	65.2	64.6
125-day	89.9	78.4	69.5	68.9
140-day	94.9	83.6	72.7	71.4
Mean	88.6	77.8	67.5	67.0

Planting Date	Year			
	1960	1961	1962	1963
Apr. 20	86.1	96.8	81.5	89.6
May 10	77.2	81.6	74.6	77.8
June 1	68.8	68.6	65.0	67.8
June 20	70.8	68.0	63.5	65.6
Mean	75.7	78.8	71.2	75.2

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	72.0	73.4	77.1	80.5
1961	74.8	76.6	79.4	84.3
1962	66.4	67.4	73.1	78.1
1963	70.5	73.5	77.0	79.8
Mean	70.9	72.7	76.7	80.7

TABLE 7--FIVE-YEAR SUMMARY OF SHELLING PERCENT FOR DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	84.7	85.2	84.3	82.7
115-day	82.7	82.9	82.4	81.2
125-day	84.1	83.5	83.1	80.9
140-day	84.7	84.5	83.8	80.7
Mean	84.1	84.0	83.4	81.4

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	83.1	84.8	83.8	84.3	84.3
May 10	83.2	84.9	83.0	84.2	84.7
June 1	83.4	84.1	83.1	83.2	83.3
June 20	81.8	81.9	81.1	84.2	77.7
Mean	82.9	83.9	82.8	84.0	82.5

Nothing Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	83.3	82.0	82.4	83.8
1961	84.5	82.9	84.2	84.0
1962	83.6	82.3	82.7	82.5
1963	85.1	82.9	83.4	84.6
1964	84.6	81.4	81.7	82.2
Mean	84.2	82.3	82.9	83.4

TABLE 8--FIVE-YEAR SUMMARY OF AVERAGE TEST WEIGHT IN POUNDS FOR THE DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	59.3	58.9	58.6	54.5
115-day	59.7	60.0	59.4	54.9
125-day	60.0	59.8	58.7	53.2
140-day	57.9	57.3	56.1	49.4
Mean	59.2	59.0	58.2	53.0

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	60.1	59.7	58.2	57.7	60.4
May 10	60.0	59.6	57.3	57.6	60.6
June 1	59.5	59.3	56.7	58.1	57.2
June 20	56.9	52.8	54.1	55.9	45.1
Mean	59.1	57.9	56.6	57.3	55.8

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1960	59.4	59.8	59.7	57.6
1961	58.7	59.0	58.8	54.8
1962	56.8	57.8	57.7	54.1
1963	57.0	58.4	57.9	56.1
1964	57.2	57.5	55.5	53.2
Mean	57.8	58.5	57.9	55.2

TABLE 9--FIVE-YEAR AVERAGE EARWORM PENETRATION GRADE FOR DATES-OF-PLANTING STUDY (1960-1964)
North Missouri Research Center, Spickard

Maturity Group	Planting Date			
	Apr. 20	May 10	June 1	June 20
90-day	2.7	2.3	3.1	3.7
115-day	2.4	2.5	3.2	3.7
125-day	2.4	2.6	3.5	3.8
140-day	2.1	2.4	3.3	3.4
Mean	2.4	2.5	3.3	3.7

Planting Date	Year				
	1960	1961	1962	1963	1964
Apr. 20	4.5	1.5	1.1	3.0	1.9
May 10	4.7	1.2	1.1	3.2	2.0
June 1	4.6	1.4	3.1	3.8	3.5
June 20	4.3	2.8	3.8	3.9	3.3
Mean	4.5	1.7	2.3	3.5	2.7

Nothing	Maturity Group			
Year	90-Day	115-Day	125-Day	140-Day
1960	3.8	4.2	4.8	5.4
1961	1.9	1.9	2.0	1.1
1962	2.3	2.3	2.3	2.2
1963	3.8	3.5	3.4	3.2
1964	3.1	2.7	2.8	2.1
Mean	3.0	2.9	3.1	2.8