

Date of Planting Studies With Corn

**in the
MISSOURI DELTA AREA**



**B862 7-67-5M
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University of Missouri, Columbia**

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Norman Brown, Superintendent of the Delta Center, supervised the plantings on the given dates and recorded the flowering dates. Dr. Armon Keaster made the European corn borer readings.

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- Corn date-of-planting studies were conducted in the Missouri Delta Area for the 10-year period 1955-64. The test site was on the Delta Center field located near Sikeston. The five approximate planting dates each year were April 1, April 20, May 10, June 1 and June 20.

Determining the most suitable planting date was the main objective of this study, but, in addition, we wished to determine the reaction of hybrids with different maturities to different planting dates. For this, we used eight hybrids representing the four relative maturity groups of 90, 115, 125, and 140 days. The number of days for relative maturity indicates the approximate number of days from planting to physiological maturity.

The four maturity groups were represented by hybrids Iowa 4376 and 4570 for the 90-day; US 13 and Kansas 1639 for the 115-day; Missouri 804 and US523W for the 125-day; and Dixie 22 and Dixie 33 for the 140-day maturity.

Hybrids were planted in 2 by 5 hill plots with four replications. Five seeds were planted in each hill and emerging plants were thinned to three.

The plots for the first three dates of planting were harvested earlier than those for the last two dates. 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 processed later for determination of earworm penetration grade, shelling percent, and test weight per bushel. European corn borer readings were made from the stalks after the ear corn had been removed.

RESULTS

Acre Yield

Average acre yields of four relative maturity groups for the five dates of planting are shown in Figure 1. The mean acre yields for April 1, April 30, May 10, June 1, and June 20 were 97, 94, 89, 77, and 57 bushels, respectively (Table 1 Appendix).

Only a small difference in yield is noted among the April 1, April 20, and May 10 plantings, but after the May 10 planting, a reduction of one bushel occurred for each day of delay in planting.

Over the 10-year period the April 1, April 20, and May 10 plantings were consistently the highest (Figure 2). Acre yields for June 1 and June 20 were lower and more erratic. The lowest mean yield, occurring in 1957, also had the smallest range between planting dates (Table 1 Appendix).

Yields for the four maturity groups over years were very consistent (Figure 3). The 140-day maturity group gave the highest yield for the April 1 and 20

planting dates and the 125-maturity group was highest for the last three dates (Table 1 Appendix). Differences in yield between the 140-day and 115-day maturity groups for the April 1, April 20, May 10, June 1, and June 20 planting dates were 15.3, 12.9, 7.5, 7.3 and -3.3 bushels, respectively.

Conclusions

1. Highest acre yields can be expected for plantings made during the month of April, and decrease in yield for plantings made after May 10.
2. Relative yield response of the four different maturity groups to the five planting dates was about the same.
3. Late maturing hybrids gave higher yields than early maturing hybrids when planted at the early dates.

Figure 1. Average yield in bushels per acre of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

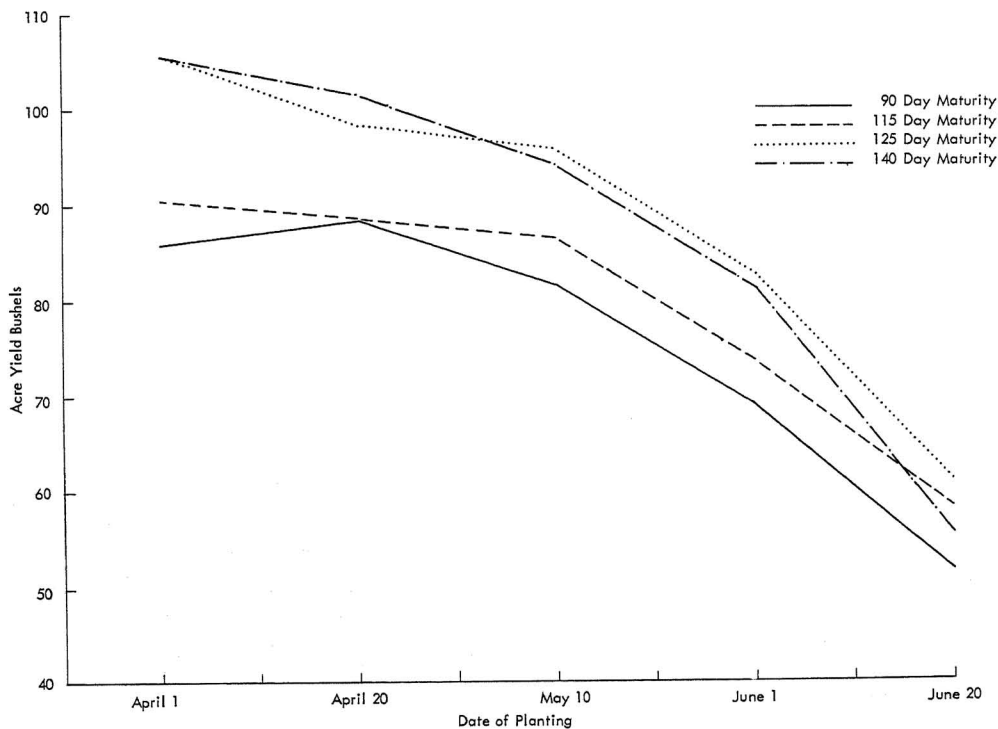


Figure 2. Average yield in bushels per acre for 5 dates of planting for each of 10 years. Delta Research Center, Sikeston Field.

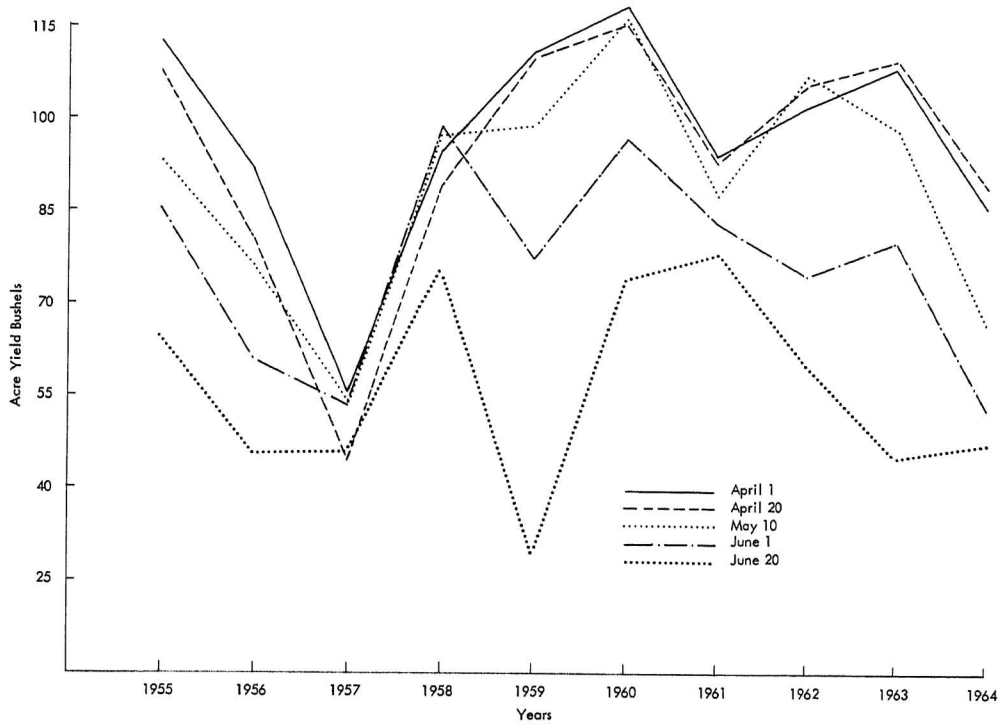
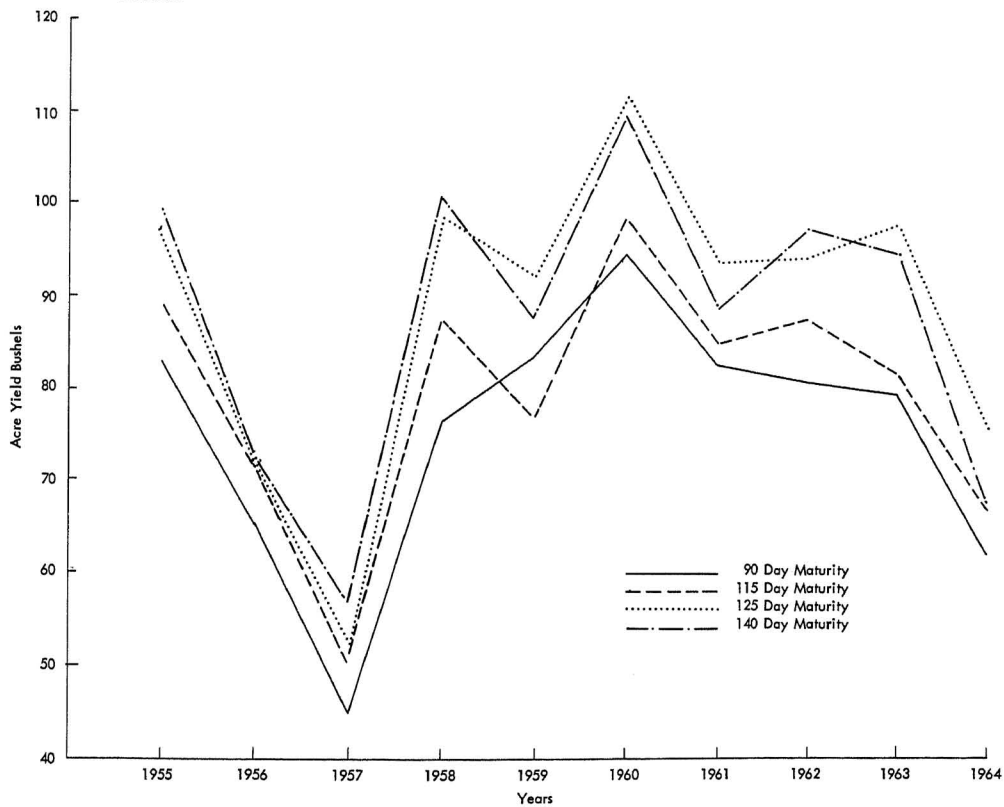


Figure 3. Average yield in bushels per acre of hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Root Lodging

Little difference was found in the average root lodging for the first three planting dates but a three-fold increase was noted for the June 1 and June 20 dates (Table 2, Appendix). Hybrids of different maturities responded about the same. The 140-day maturity group had the most root lodging for each of the five dates (Figure 4). Root lodging was highest for either the June 1 or June 20 planting date over the 10 years (Figure 5). The amount of lodging

varied over the years; excessive root lodging occurred in 1958, 1959, and 1963 (Figure 6).

Conclusions:

1. Root lodging was least for the first 3 planting dates and increased 3 fold for the last 2 dates.
2. Full season hybrids root-lodged more than the earlier maturing types regardless of planting date.

Figure 4. Average root lodging in percent of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

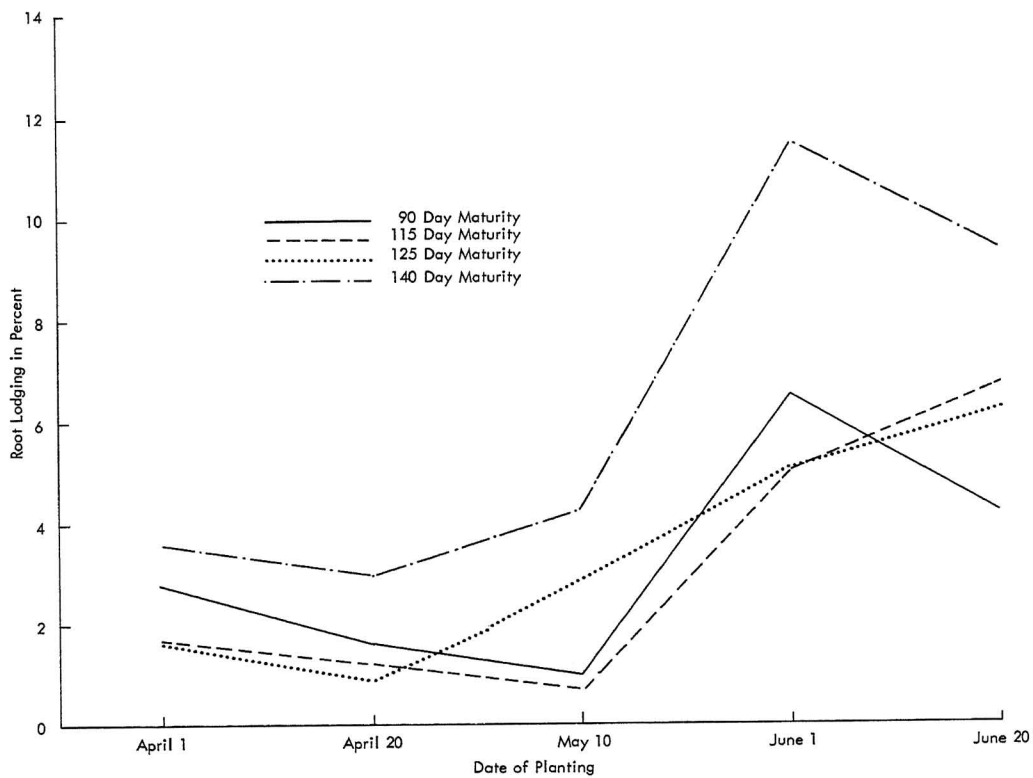


Figure 5. Average root lodging in percent for 5 dates of planting for each of 10 years. Delta Research Center. Sikeston Field.

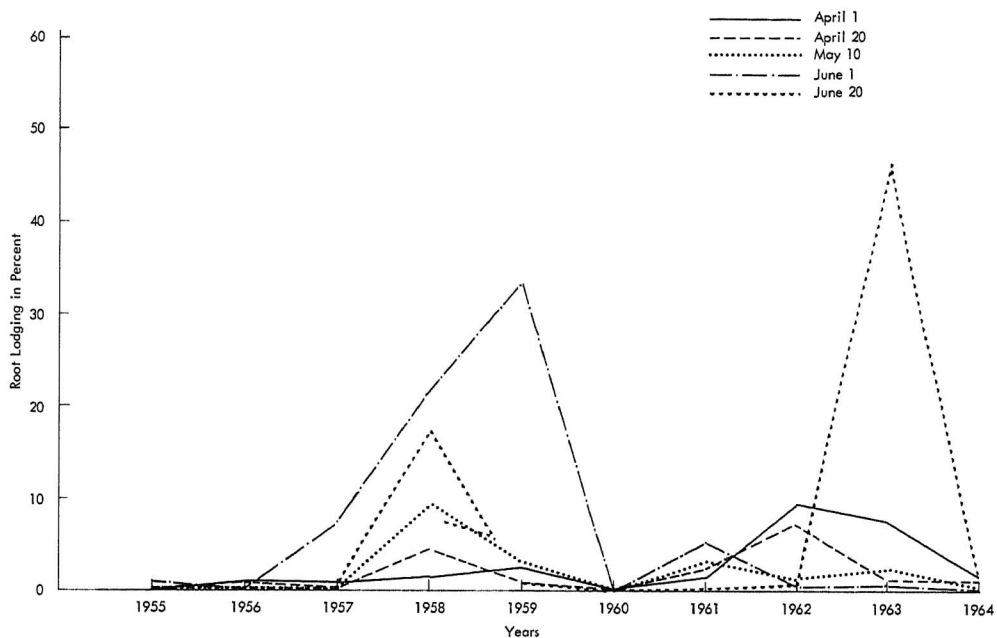
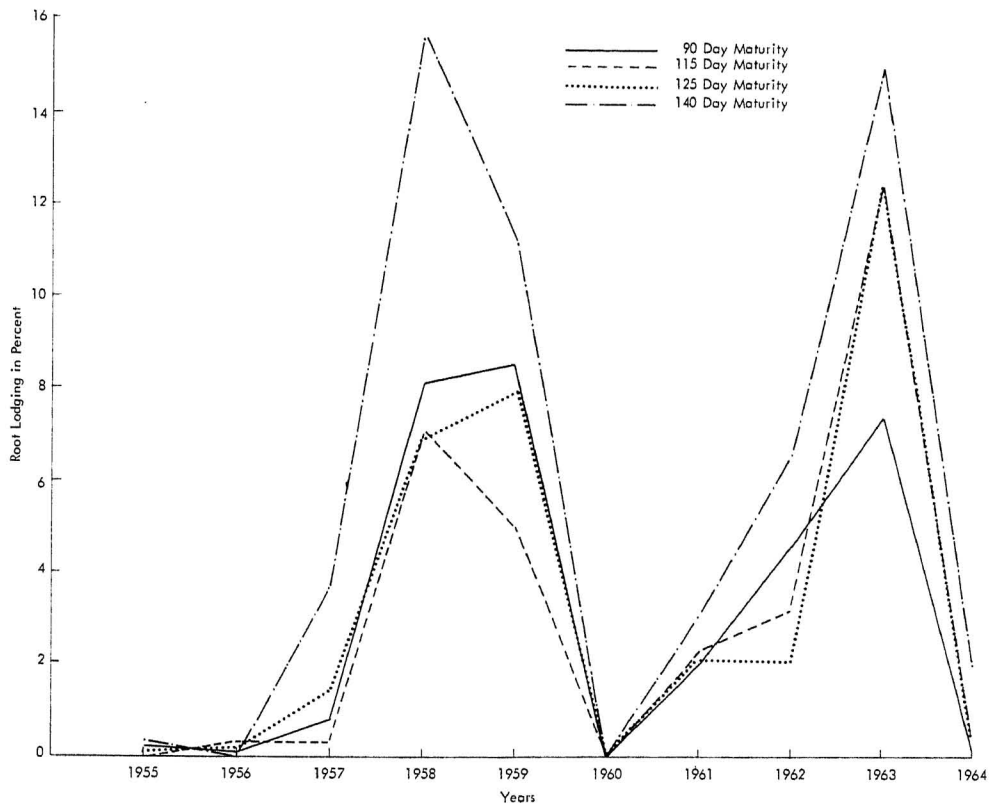


Figure 6. Average root lodging in percent of hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Stalk Lodging

Stalk lodging was lowest for the April 1 and April 20 planting date and increased significantly for each date of planting after April 20 (Figure 7, Table 3 Appendix). The greatest amount of stalk lodging was found for the June 1 and June 20 planting date in 7 of the 10 years (Figure 8). The least amount of stalk lodging was found for the early maturing hybrids for each of the 10 years (Figure 9).

Conclusion:

1. Stalk lodging was lowest for the early planting dates and increased for each 20 day delay in planting after April 20 up to the June 1 planting date.
2. Later maturing hybrids stalk lodged more than early maturing hybrids, regardless of planting dates.

Figure 7. Average stalk lodging in percent of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

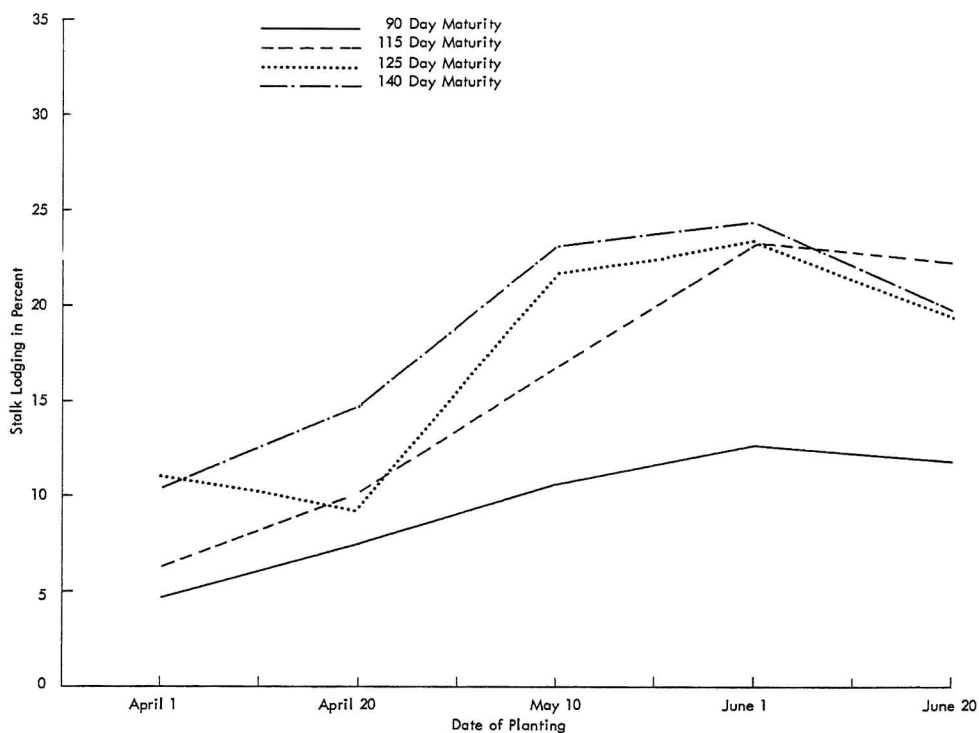


Figure 8. Average stalk lodging in percent for 5 dates of planting for each of 10 years. Delta Research Center, Sikeston Field.

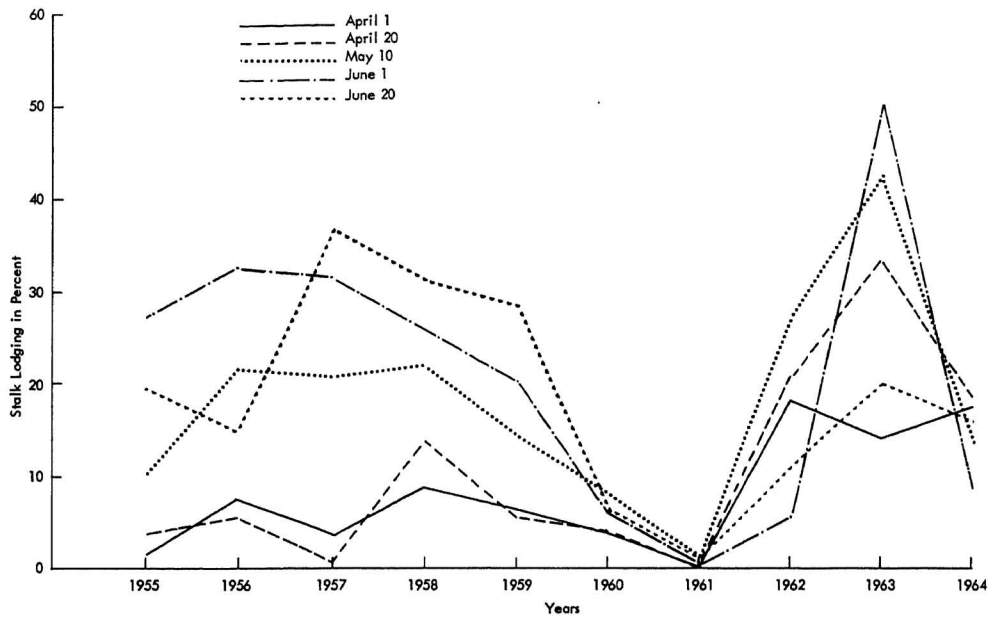
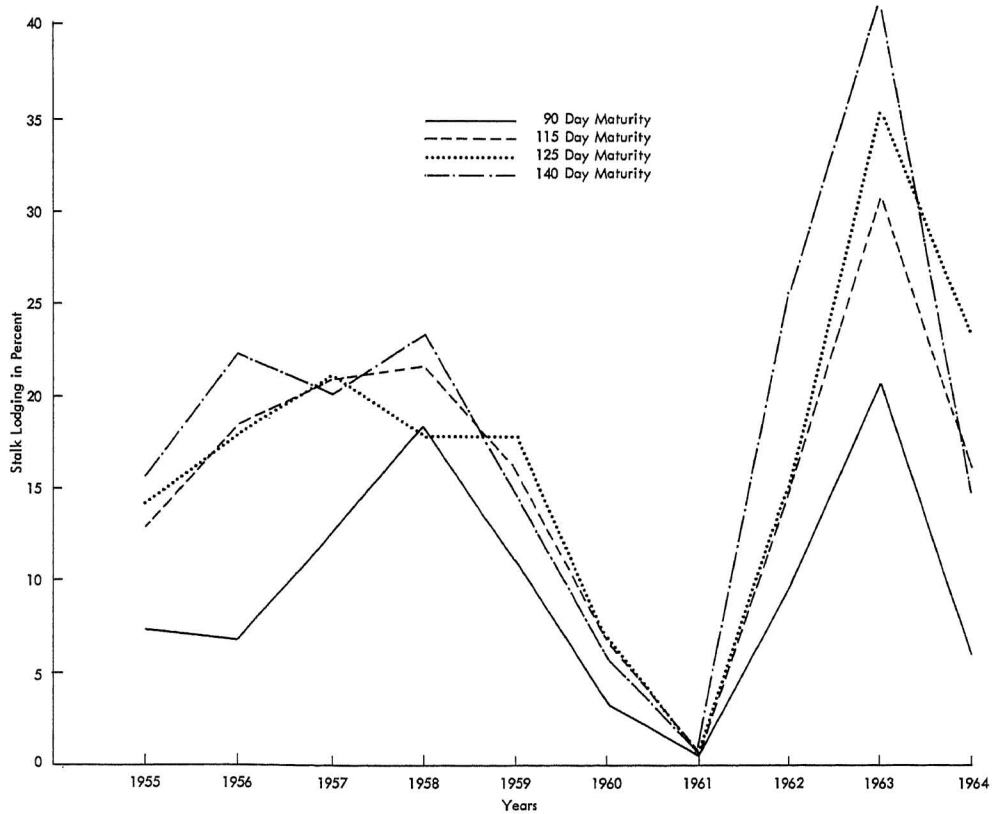


Figure 9. Average stalk lodging in percent for hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Ear Height Grade

Ear height grades were lowest for the April 1 planting and gradually increased in height as planting dates were delayed (Figure 10 and Table 4, Appendix). Ear height grades were directly associated with the four relative maturity groups. This association was noted for the five dates of planting (Figure 11) and over the 10 years (Figure 12).

Conclusions:

1. Ear height grades increased as planting dates were delayed.
2. Ear height grades were directly associated with maturity groups and this association was consistent over all planting dates and years.

Figure 10. Average ear height grade of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

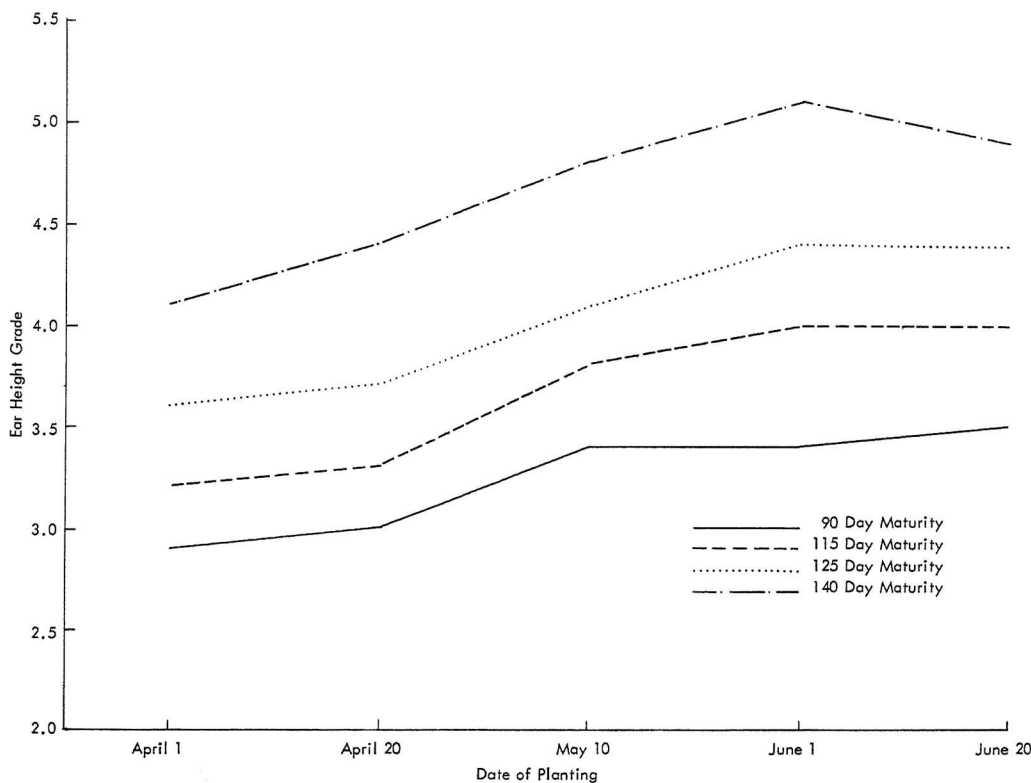


Figure 11. Average ear height grade for 5 dates of planting for each of 10 years. Delta Research Center, Sikeston Field.

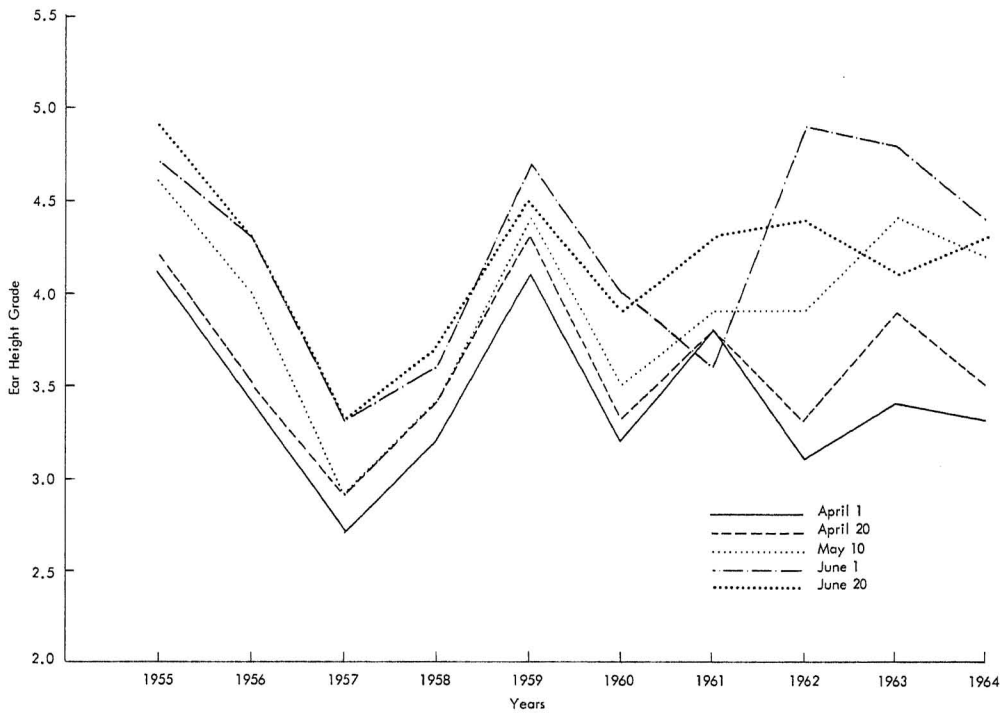
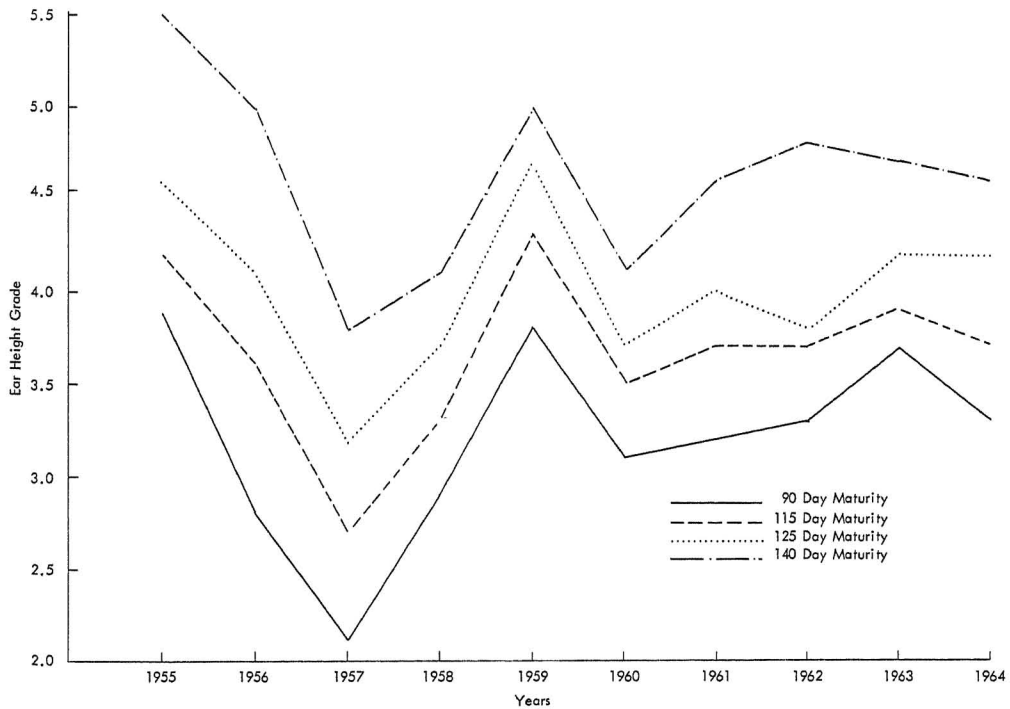


Figure 12. Average ear height grade of hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Number of Days from Planting to Tasseling

A plot was recorded as tasseled when approximately 50 percent of the plants had tassels showing anthers. Number of days from planting to tasseling was calculated by subtracting the planting date from the date of tasseling. The number of days from planting to tasseling was greatest for the April 1 planting date; it decreased with each 20-day delay in planting (Table 5, Appendix). The four maturity groups showed the same relative number of days from planting to tasseling (Figure 13). The relative response of the four maturity groups was consistent over all dates (Figure 13) and years (Figure 14). The number of days from planting to tasseling corresponded

with the relative maturity groups (Figure 15).

Conclusion:

1. Number of days from planting to tasseling was longest for the earliest planting date (April 1) and decreased with each subsequent planting date.
2. Number of days from planting to tasseling corresponded closely with the four relative maturity groups.
3. Number of days from planting to tasseling was consistent for planting dates over years and maturity groups over years.

Figure 13. Average number of days from planting to tasseling of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

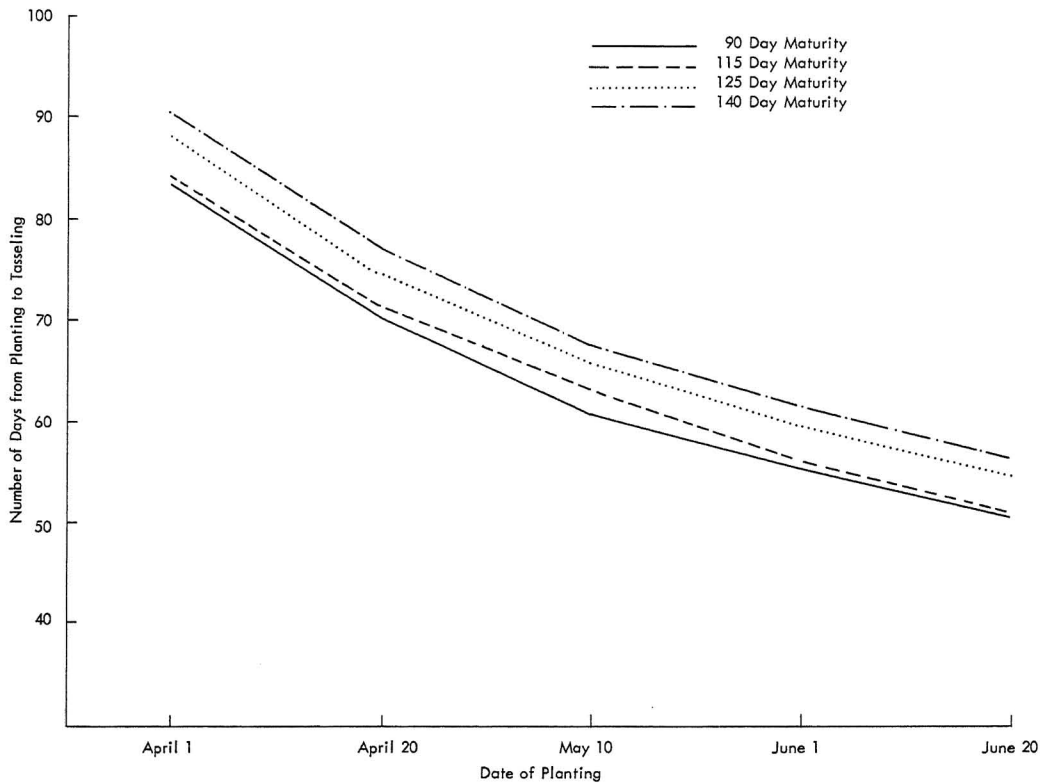


Figure 14. Average number of days from planting to tasseling for 5 dates of planting for each of 10 years. Delta Research Center, Sikeston Field.

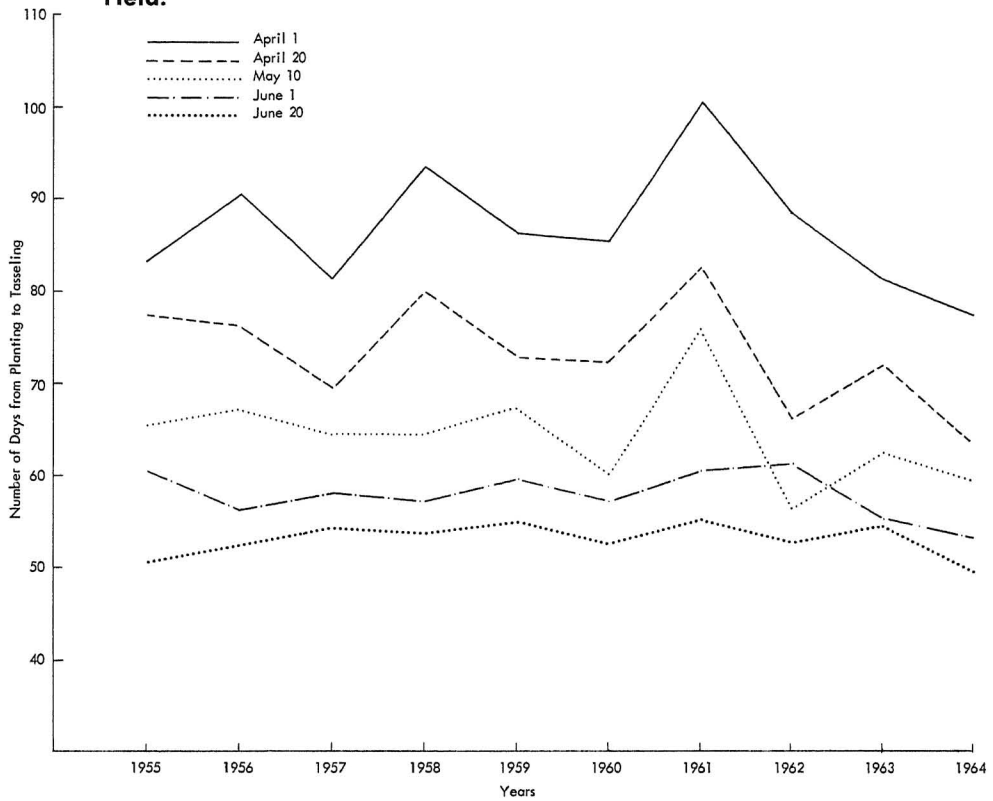
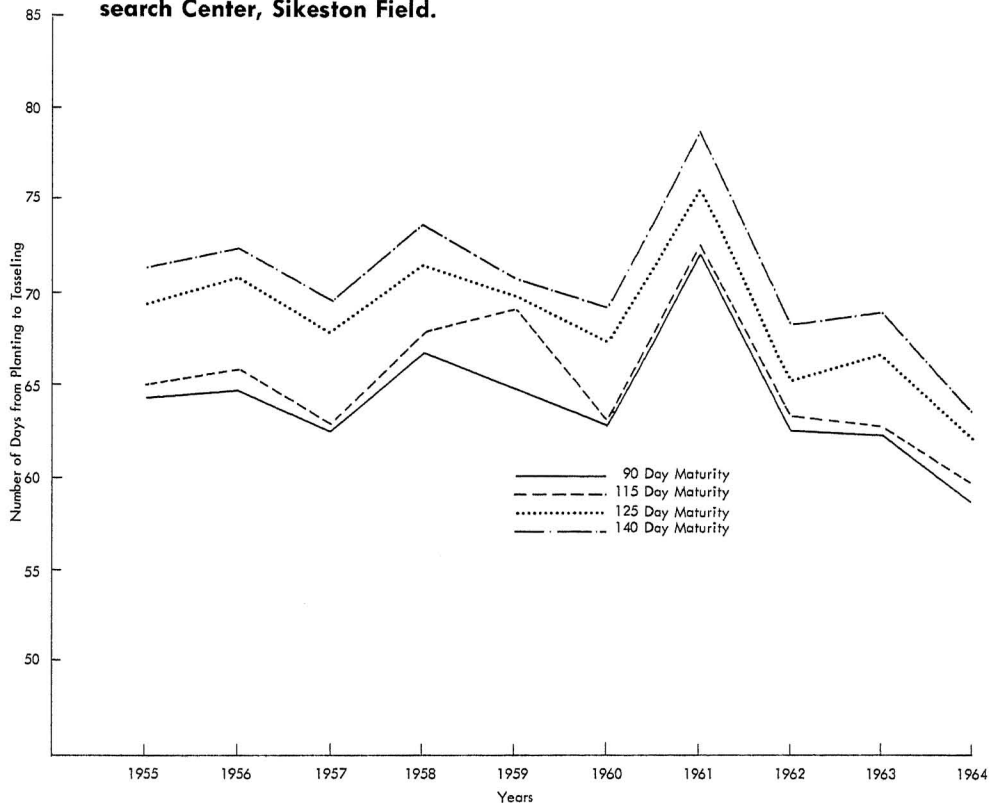


Figure 15. Average number of days from planting to tasseling of hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Number of Days from Planting to Silking

A plot was recorded as silked when 50 percent of the plants showed silks. Number of days from planting to silking was computed in the same manner as the number of days from planting to tasseling. The number of days from planting to silking followed the same pattern as the number of days from planting to tasseling (Figures 16, 17, and 18). Differences between number of days for tasseling and silking were 1.5; 1.6; 1.7; 1.5; and 1.8 for the April 1, April 20, May 10, June 1, and June 20 planting dates, respectively.

Differences between tasseling and silking for 90, 115, 125 and 140 day maturity groups were 0.9; 1.5; 1.7; and 2.3 days, respectively (Table 6, Appen-

dix). Differences between tasseling and silking over the 10 years ranged from 0.3 in 1959 to 3.3 days in 1964.

Conclusions:

1. Number of days from planting to silking followed the same pattern as the number of days from planting to tasseling.
2. Very little difference was noted between number of days from planting to tasseling and silking for the 5 planting dates.
3. Differences in number of days between tasseling and silking were smallest for the 90 day and greatest for the 140 day maturity group.

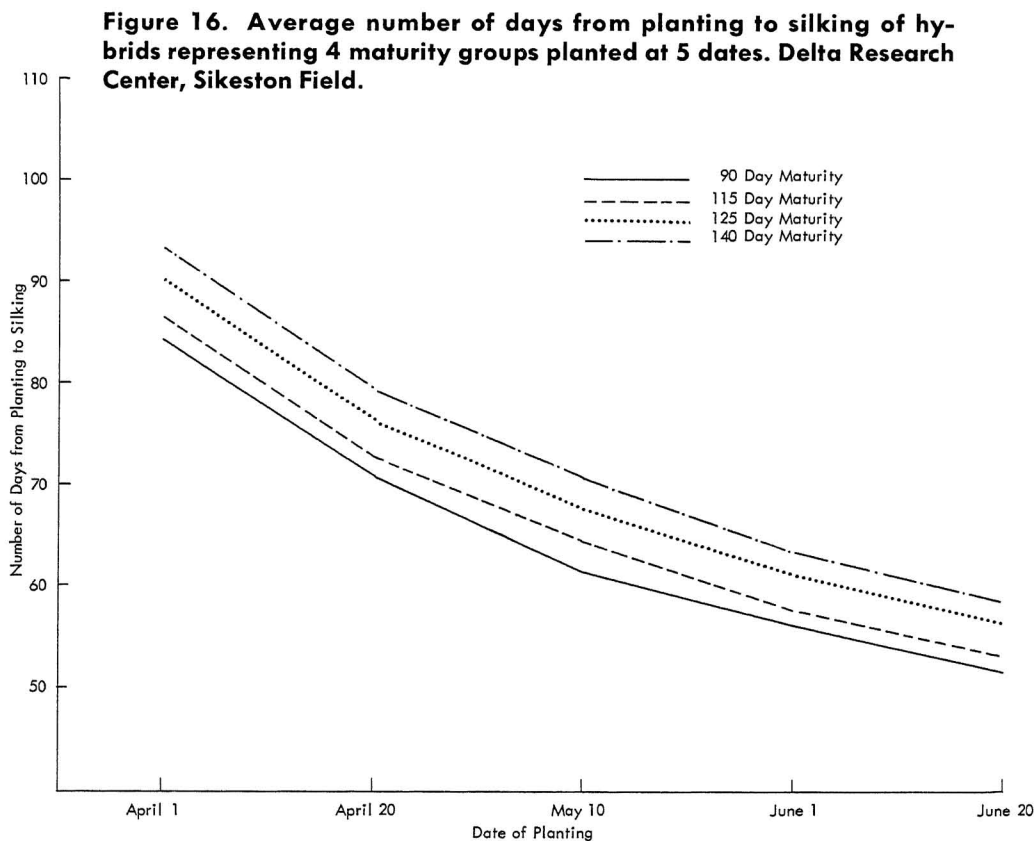
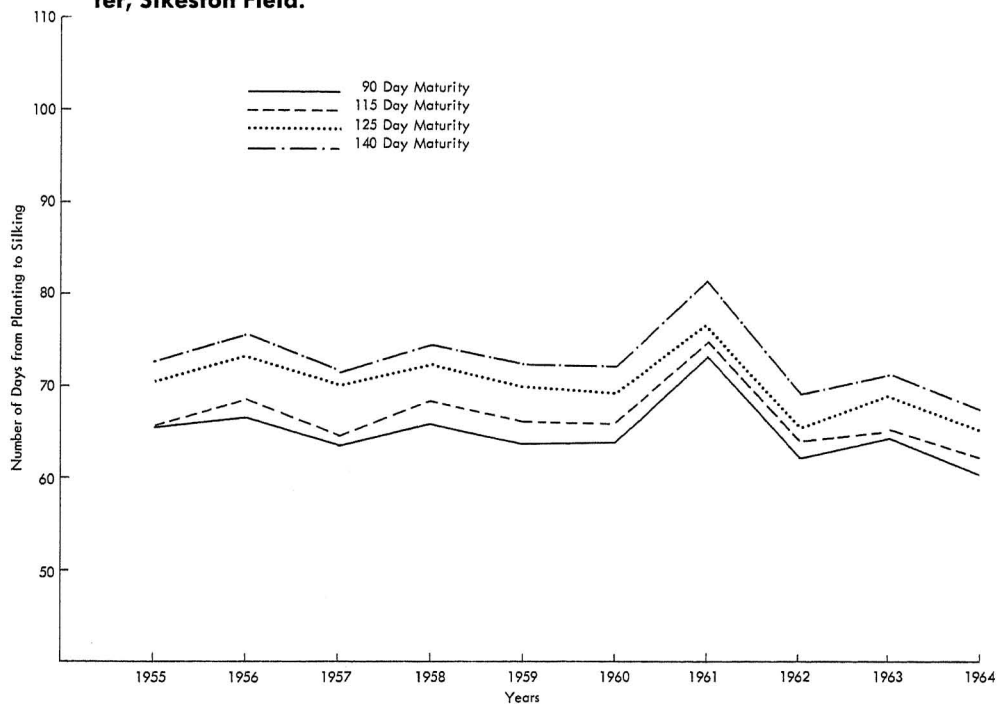


Figure 17. Average number of days from planting to silking for 5 dates of planting for each of 10 years. Delta Research Center, Sikeston Field.



Figure 18. Average number of days from planting to silking of hybrids representing 4 maturity groups for each of 10 years. Delta Research Center, Sikeston Field.



Shelling Percent

Shelling percentage was determined by drying ear corn to a uniform basis of about 8 percent 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 weight and multiplying by 100.

Little difference in shelling percent was found among the April 1, April 20, and May 10 planting dates (Table 7, Appendix). A slight decrease occurred between the May 10 and June 1 dates and a larger decrease occurred for the June 20 date. The different maturity groups gave about the same rela-

tive response over planting dates (Figure 19) and years (Figure 21). The June 20 planting date had the lowest shelling percent over the nine years that shelling percentages were determined (Figure 20).

Conclusions:

1. Shelling percentages were about the same for the first three planting dates and decreased for the June 1 and June 20 planting dates.
2. Shelling percentages for the four maturity groups ranked relatively the same over planting dates and years.

Figure 19. Average shelling percent of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

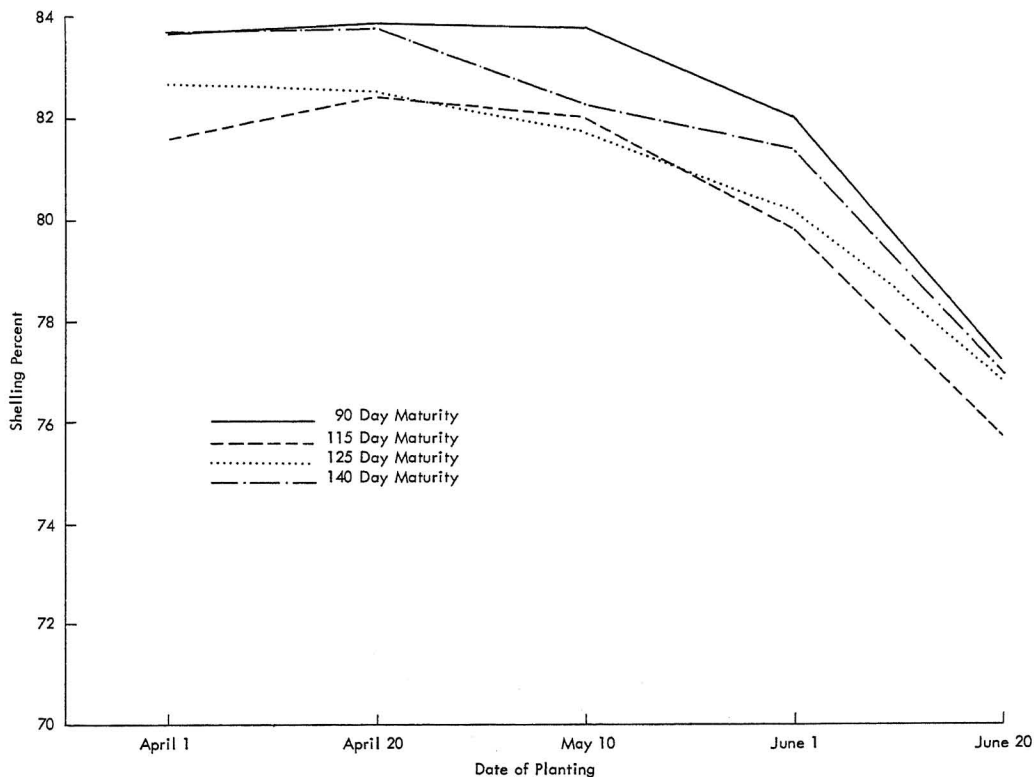


Figure 20. Average shelling percent for 5 dates of planting for each of 9 years. Delta Research Center, Sikeston Field.

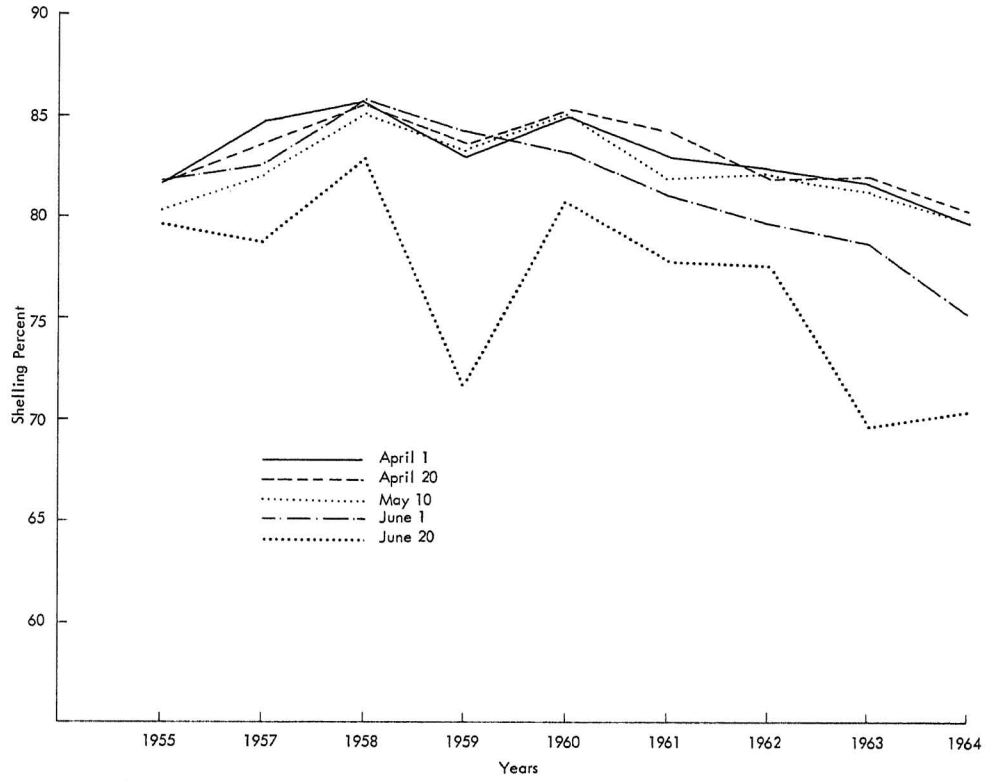
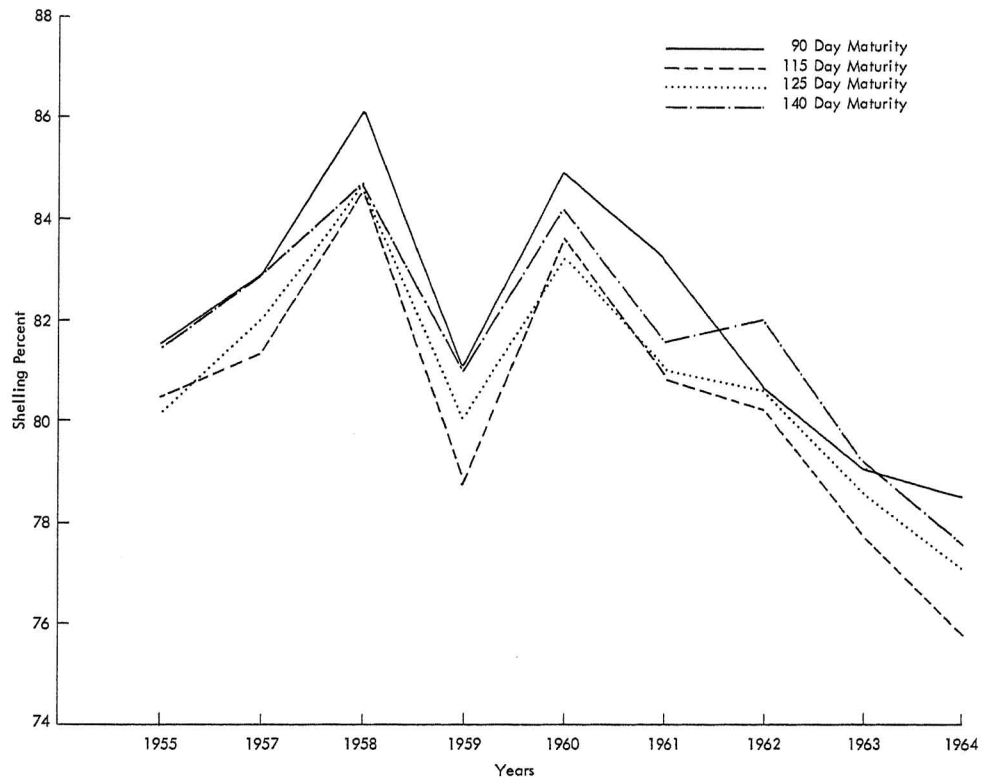


Figure 21. Average shelling percent of hybrids representing 4 maturity groups for each of 9 years. Delta Research Center, Sikeston Field.



Bushel Test Weight

Bushel test weight was determined at the time shelling percentages were determined, when the moisture content of the corn was approximately 8 percent.

Test weights were highest for the April 1 and April 20 planting dates, and lower with each delay in planting date after April 20 (Figure 22). A 5.9 pound difference was found between the April 1 and June 20 planting dates (Table 8, Appendix). Test weights for dates of planting over years (Figure 23) and maturity groups over years (Figure 24) followed the same relative relationship with the early dates

higher than the late ones and the three early maturity groups superior to the 140-day.

Conclusions:

1. Bushel test weights were highest for the two earliest planting dates and declined as planting dates were delayed after April 20.
2. Test weight for the 140-day maturity group was lowest regardless of planting date; little difference was noted among the other three groups.
3. Test weights over years ranged from 58.8 pounds in 1961 to a low of 55.3 in 1963 and 1964.

Figure 22. Average test weight in pounds per bushel of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

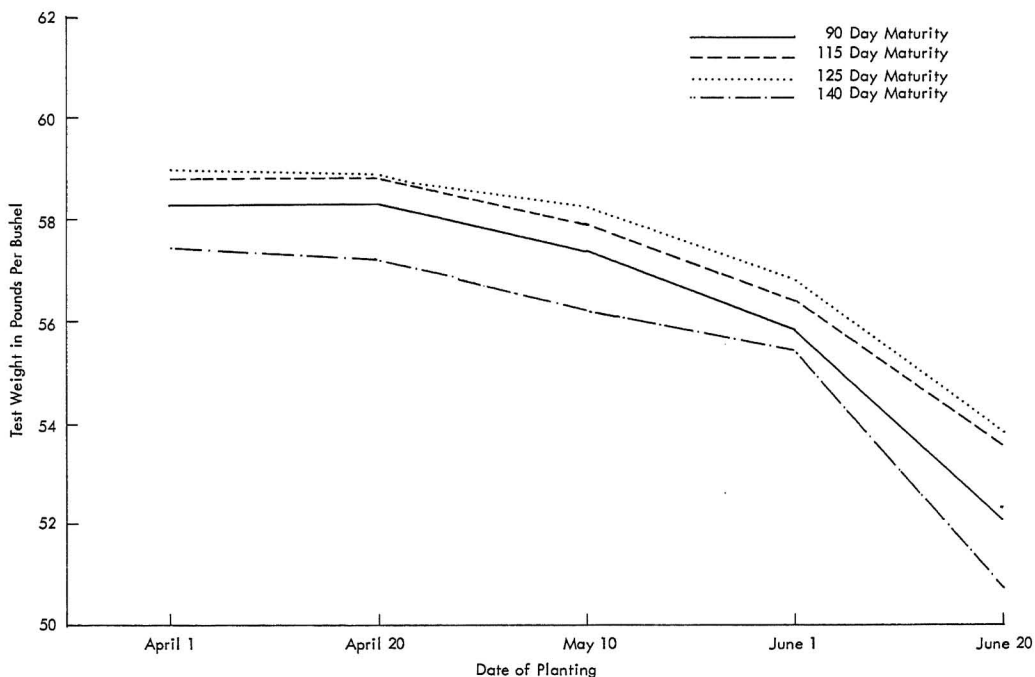


Figure 23. Average test weight in pounds per bushel for 5 dates of planting for each of 7 years. Delta Research Center, Sikeston Field.

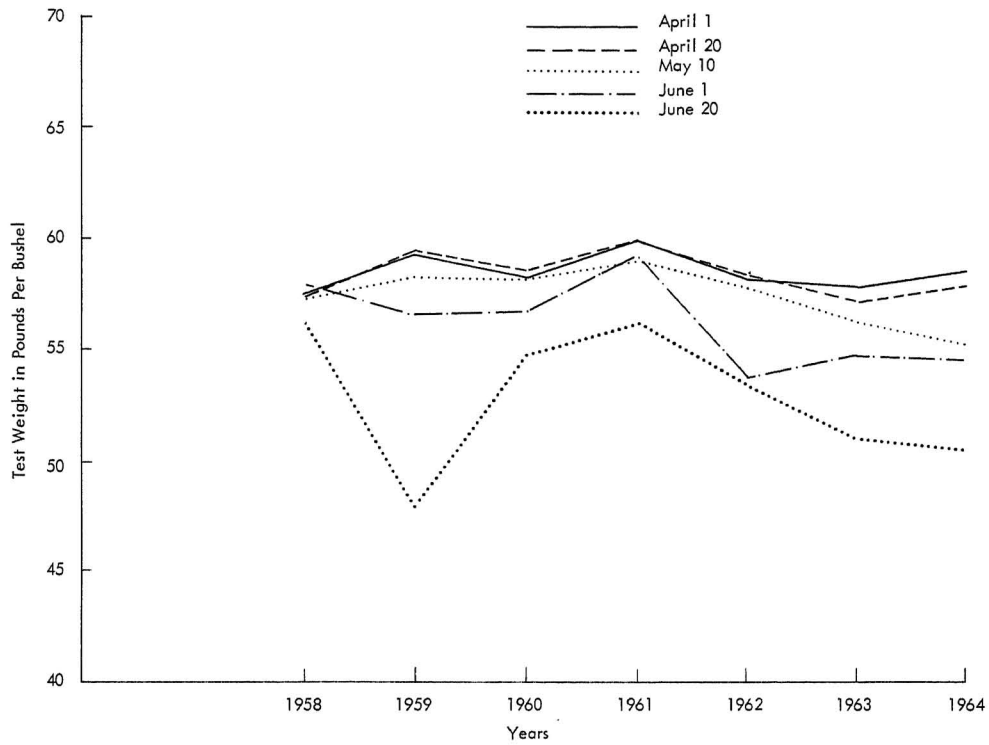
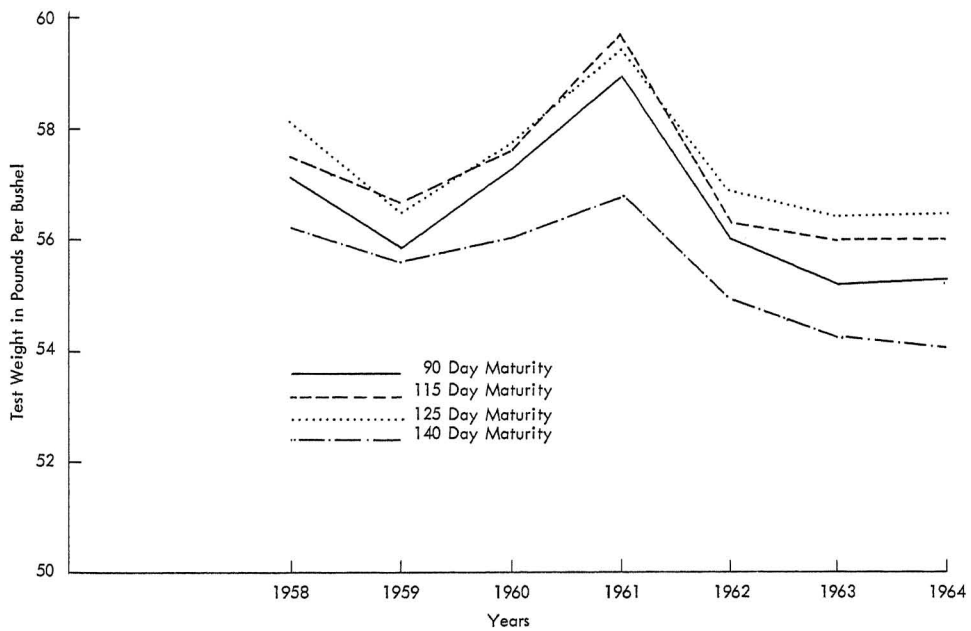


Figure 24. Average test weight in pounds per bushel of hybrids representing 4 maturity groups for each of 7 years. Delta Research Center, Sikeston Field.



Earworm Penetration Grade

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

Earworm damage was least for the April 1 planting date and highest for the June 1 and June 20 dates (Table 10, Appendix). The four maturity groups gave the same relative response to planting dates (Figure 25) with the 140-day group having less damage than the other three. Maturity groups showed the same relative trend over years (Figure 27). The greatest earworm damage occurred in 1956 and 1964

with the least damage in 1960, 1961, and 1962 (Figure 26).

Conclusions:

1. Earworm damage increased as planting dates were delayed with the April 1 and April 20 planting dates showing the least damage.
2. The four maturity groups gave the same relative response to planting dates with the 140-day maturity group showing the least damage.
3. Earworm damage over years ranged from a high of 4.6 in 1956 to a low of 2.6 in 1960.

Figure 25. Average earworm penetration grade of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

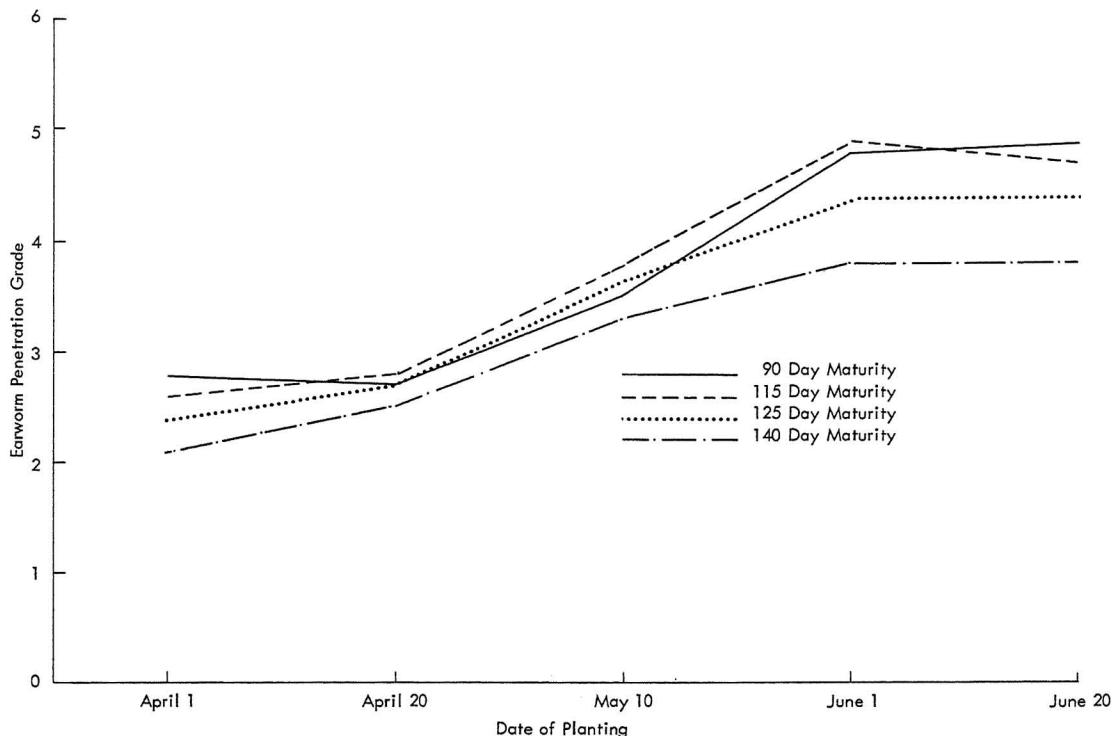


Figure 26. Average earworm penetration grade for 5 dates of planting for each of 9 years. Delta Research Center, Sikeston Field.

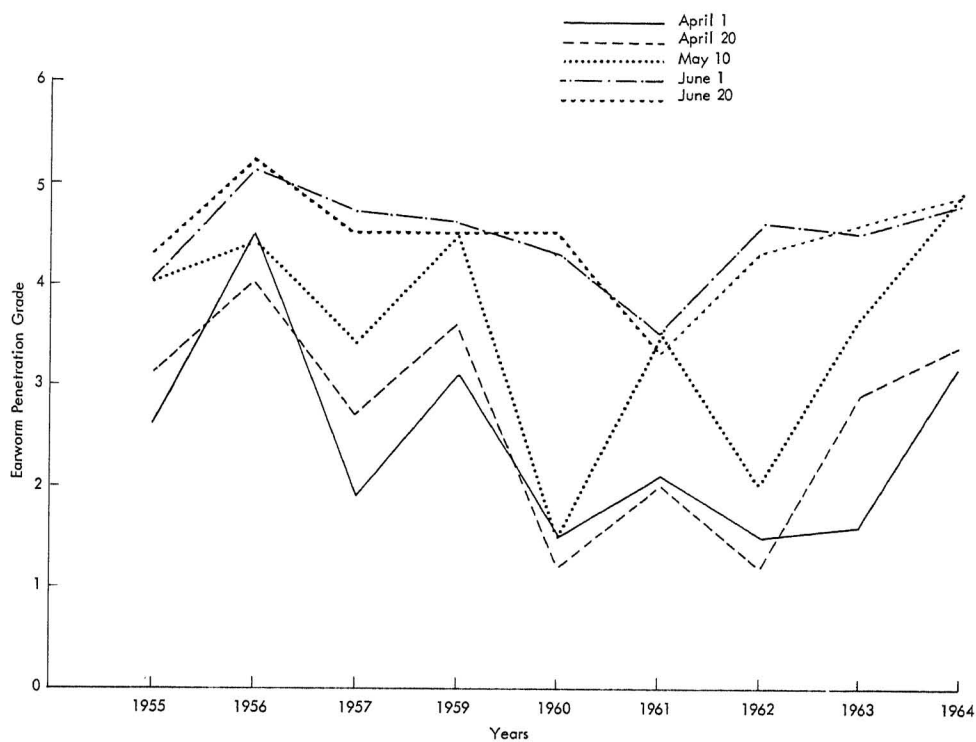
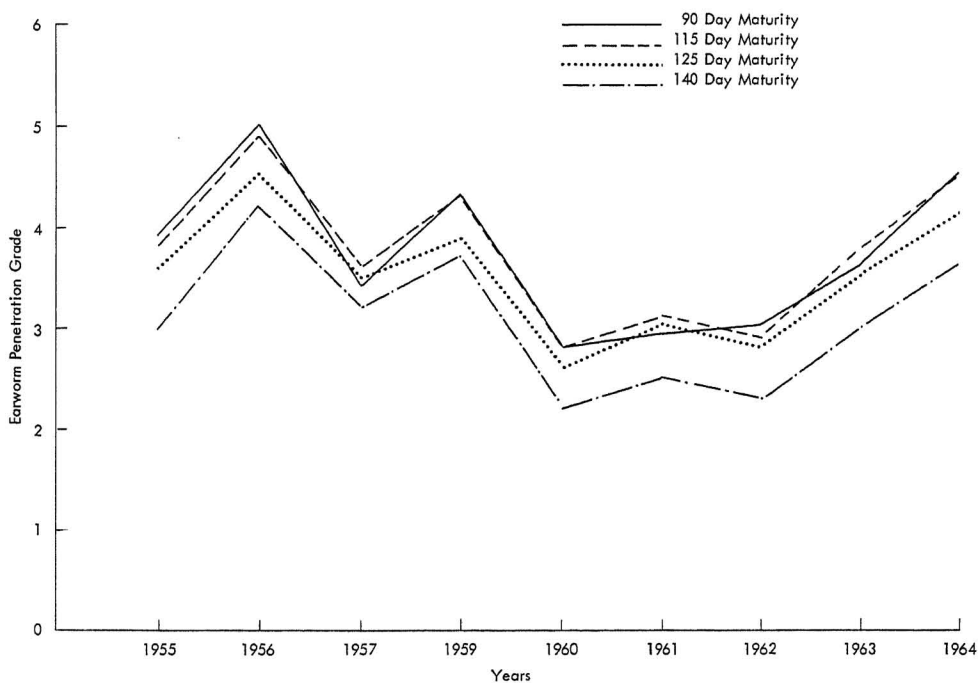


Figure 27. Average earworm penetration grade of hybrids representing 4 maturity groups for each of 9 years. Delta Research Center, Sikeston Field.



Number of European Corn Borer Tunnels

Number of European cornborer tunnels was determined by dissecting 10 plants in each plot shortly after harvest.

The number of tunnels increased after the April 20 planting date. The large number of tunnels for the June 1 and June 20 planting dates was attributed to the second and third brood of European cornborer (Table 10, Appendix). Although the number of tunnels per 10 plants for the four maturity groups reacted about the same over the five dates of planting (Figure 28), the 90-day maturity group appeared to have fewer tunnels than the later maturity groups. The two earliest planting dates had the fewest borers in each of the nine years (Figure 29). The last three

planting dates resulted in about the same over each of the nine years with the crop planted June 20 usually having the largest number of borers. The magnitude of infestation for each of the nine years is shown in Figure 30.

Conclusions:

1. Number of European corn borer tunnels was lowest for the April 1 and April 20 planting dates, and was highest for the last 3 planting dates.
2. Maturity groups responded about the same with the earliest maturity having a lesser number of tunnels regardless of planting dates.

Figure 28. Average number of European corn borer tunnels per 10 plants of hybrids representing 4 maturity groups planted at 5 dates. Delta Research Center, Sikeston Field.

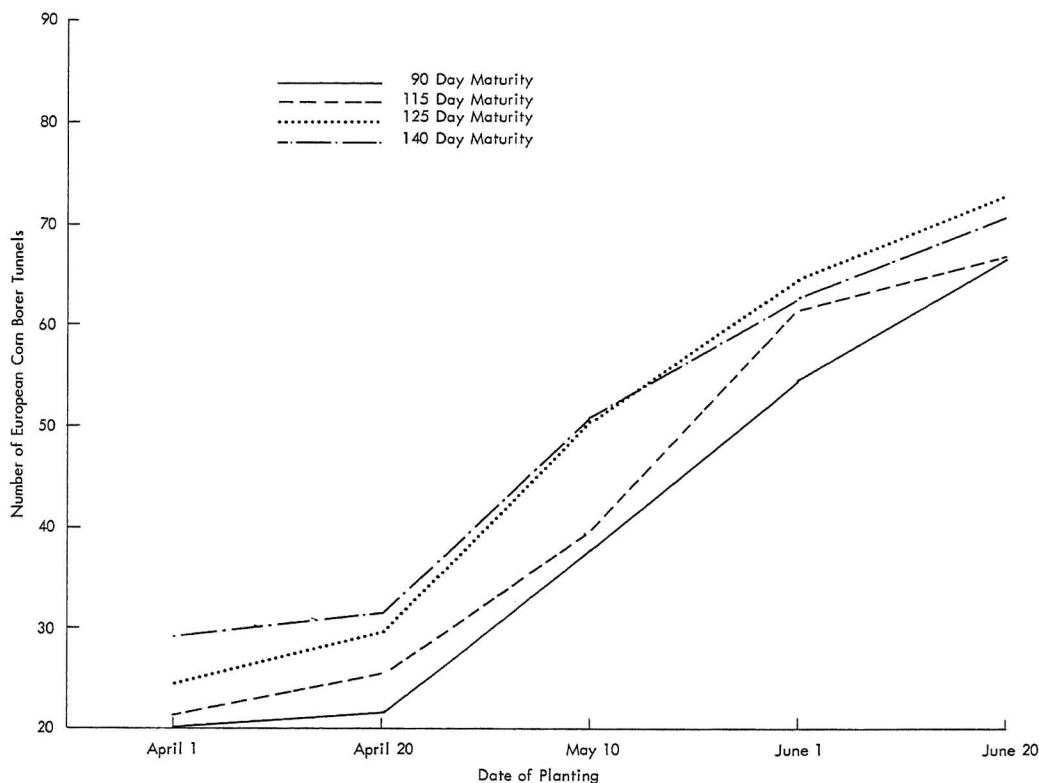


Figure 29. Average number of European corn borer tunnels per 10 plants for 5 dates of planting for each of 9 years. Delta Research Center, Sikeston Field.

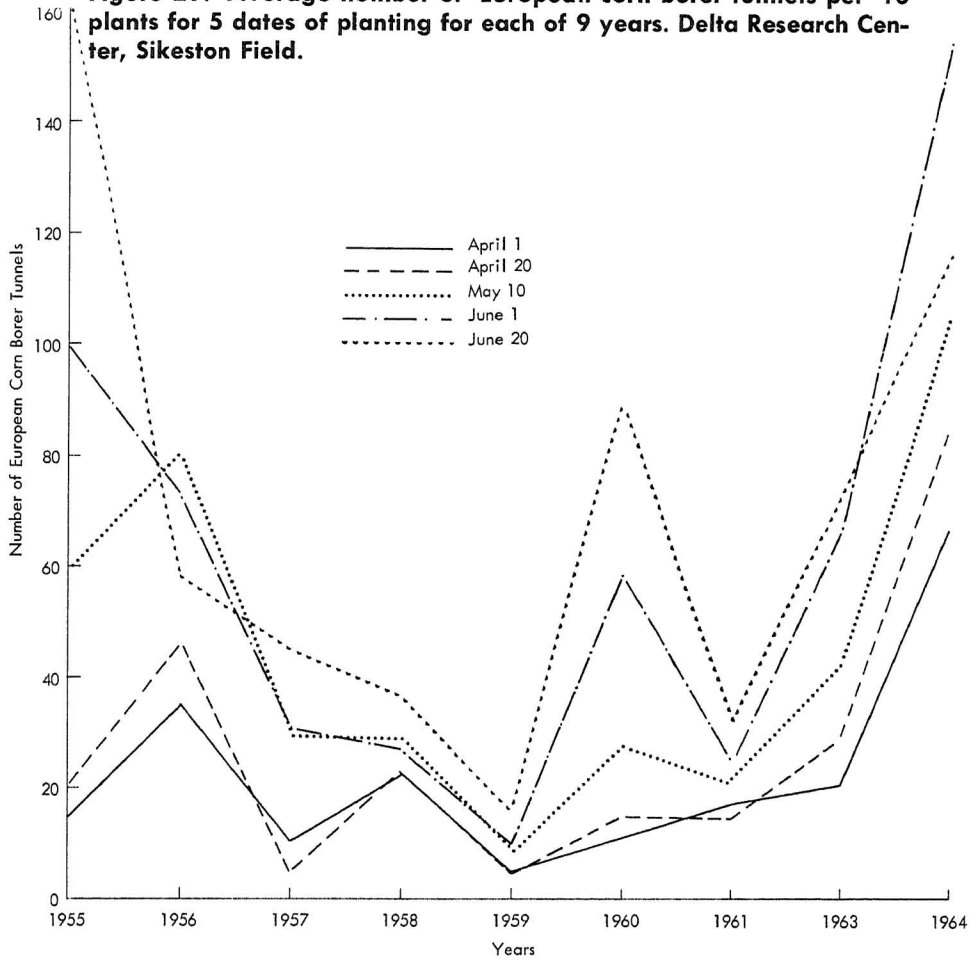
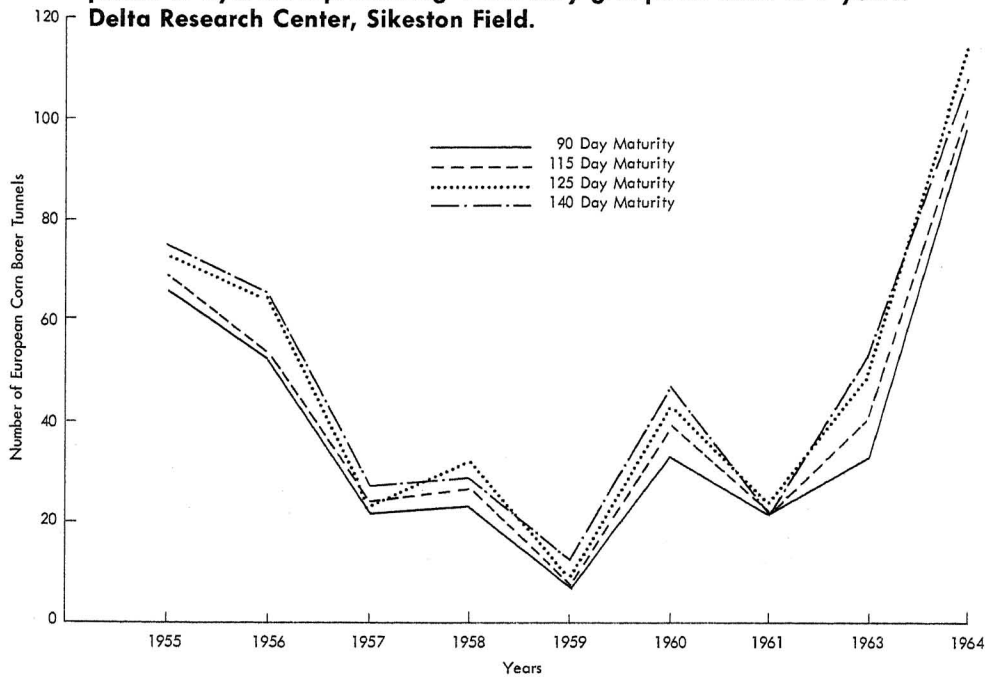


Figure 30. Average number of European corn borer tunnels per 10 plants of hybrids representing 4 maturity groups for each of 9 years. Delta Research Center, Sikeston Field.



Appendix

APPENDIX TABLE 1--SUMMARY OF THE AVERAGE YIELD IN BUSHEL PER ACRE
FOR THE DATE-OF-PLANTING STUDY CONDUCTED FOR THE 10 YEAR PERIOD
(1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	86.2	88.2	81.3	69.0	51.8
115-day	90.4	88.8	86.6	73.8	58.5
125-day	105.3	98.3	95.8	82.3	60.6
140-day	105.7	101.7	94.1	81.1	55.3
Mean	96.9	94.3	89.5	76.6	56.6

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	112.2	89.7	55.7	94.6	110.7	116.6	93.9	101.9	108.4	85.5
Apr. 20	105.9	81.4	44.1	88.7	109.5	115.6	92.7	105.9	110.0	88.6
May 10	93.7	74.7	53.5	97.0	98.3	116.2	88.6	107.2	98.7	66.7
June 1	85.6	61.1	54.9	98.5	76.8	96.3	83.9	74.9	80.8	52.6
June 20	65.1	45.2	45.7	75.2	29.9	73.3	78.5	59.7	45.1	47.3
Mean	92.5	70.4	50.8	90.8	85.0	103.6	87.5	89.9	88.6	68.1

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	83.1	89.8	97.4	99.7
1956	65.5	71.6	71.8	72.7
1957	44.9	50.3	51.6	56.4
1958	76.3	87.8	98.6	100.6
1959	83.4	76.8	92.0	87.9
1960	94.6	98.6	111.6	109.8
1961	82.7	85.0	93.9	88.5
1962	80.6	87.8	94.0	97.3
1963	79.4	81.7	97.9	95.4
1964	62.2	66.9	75.8	67.7
Mean	75.3	79.6	88.5	87.6

APPENDIX TABLE 2--SUMMARY OF AVERAGE ROOT LODGING FOR DATES-OF-PLANTING
STUDY CONDUCTED FOR THE 10 YEAR PERIOD (1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	2.8	1.6	0.9	6.5	4.2
115-day	1.7	1.2	0.7	5.0	6.7
125-day	1.6	0.9	2.8	5.1	6.6
140-day	3.6	3.0	4.3	11.5	9.4
Mean	2.4	1.7	2.2	7.0	6.7

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	0.0	0.2	0.3	1.1	2.4	0.0	1.1	9.6	7.6	1.9
Apr. 20	0.0	0.3	0.0	4.2	0.7	0.0	2.1	7.1	1.2	1.1
May 10	0.0	0.0	0.0	9.3	3.0	0.0	3.2	1.7	2.7	0.0
June 1	0.8	0.1	7.2	21.7	33.6	0.0	5.3	0.5	0.9	0.0
June 20	0.0	0.2	0.3	17.2	0.8	0.0	0.0	1.8	46.4	0.0

Table 2 Cont.

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Mean	0.1	0.1	1.5	10.7	8.1	0.0	2.3	4.1	11.7	0.6

Years	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	0.2	0.0	0.1	0.4
1956	0.1	0.3	0.2	0.0
1957	0.8	0.3	1.4	3.7
1958	8.1	7.1	6.9	15.6
1959	8.5	4.9	8.0	11.2
1960	0.0	0.0	0.0	0.0
1961	2.0	2.3	2.1	3.1
1962	4.6	3.2	2.1	6.6
1963	7.4	12.4	12.2	15.0
1964	0.0	0.2	0.3	1.9
Mean	3.2	3.1	3.3	5.8

APPENDIX TABLE 3--SUMMARY OF AVERAGE STALK LODGING FOR DATES-OF-PLANTING STUDY CONDUCTED FOR THE 10 YEAR PERIOD (1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	4.9	7.5	10.6	12.6	11.9
115-day	6.4	10.2	16.7	23.3	22.3
125-day	11.1	9.3	21.6	23.2	19.5
140-day	10.4	14.7	23.0	24.2	19.6
Mean	8.2	10.4	18.0	20.8	18.3

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	1.4	7.2	3.5	8.9	6.4	3.9	0.4	18.5	14.1	17.7
Apr. 20	3.3	5.4	0.5	13.8	5.4	4.0	0.3	20.6	33.1	18.7
May 10	10.1	21.6	20.2	22.0	14.3	8.1	0.6	27.4	42.8	14.9
June 1	27.1	32.4	31.4	25.9	20.2	6.0	0.7	5.8	50.4	8.1
June 20	19.3	14.6	36.8	31.0	28.6	6.3	1.1	9.3	20.0	16.1
Mean	12.2	16.2	18.5	20.3	15.0	5.7	0.6	16.3	32.1	15.1

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	7.1	12.8	14.1	15.6
1956	6.6	18.4	17.7	22.3
1957	12.5	20.8	21.1	20.1
1958	18.3	21.5	17.6	23.4
1959	11.0	16.0	17.9	14.9
1960	3.2	6.6	7.0	5.7
1961	0.5	0.6	0.5	0.8
1962	9.6	15.2	15.1	25.2
1963	20.7	30.8	35.5	41.3
1964	5.8	16.0	23.1	14.7
Mean	9.5	15.9	17.0	18.4

APPENDIX TABLE 4--SUMMARY OF AVERAGE EAR HEIGHT GRADE FOR DATES-OF-PLANTING STUDY CONDUCTED FOR THE 10 YEAR PERIOD (1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	2.9	3.0	3.4	3.4	3.5
115-day	3.2	3.3	3.8	4.0	4.0
125-day	3.6	3.7	4.1	4.4	4.4
140-day	4.1	4.4	4.8	5.1	4.9
Mean	3.5	3.6	4.0	4.2	4.2

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	4.1	3.4	2.7	3.2	4.1	3.2	3.8	3.1	3.4	3.3
Apr. 20	4.2	3.5	2.9	3.4	4.3	3.3	3.8	3.3	3.9	3.5
May 10	4.6	4.0	2.9	3.4	4.4	3.5	3.9	3.9	4.4	4.2
June 1	4.7	4.3	3.3	3.6	4.7	4.0	3.6	4.9	4.8	4.4
June 20	4.9	4.3	3.3	3.7	4.5	3.9	4.3	4.4	4.1	4.3
Mean	4.5	3.9	3.0	3.5	4.4	3.6	3.9	3.9	4.1	3.9

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	3.9	4.2	4.6	5.5
1956	2.8	3.6	4.1	5.0
1957	2.1	2.7	3.2	3.8
1958	2.9	3.3	3.7	4.1
1959	3.8	4.3	4.7	5.0
1960	3.1	3.5	3.7	4.1
1961	3.2	3.7	4.0	4.6
1962	3.3	3.7	3.8	4.8
1963	3.7	3.9	4.2	4.7
1964	3.3	3.7	4.2	4.6
Mean	3.2	3.7	4.0	4.6

APPENDIX TABLE 5--SUMMARY OF AVERAGE NUMBER OF DAYS FROM PLANTING TO TASSELING FOR THE DATES-OF-PLANTING STUDY CONDUCTED FOR THE 10 YEAR PERIOD (1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	83.7	70.2	60.8	55.1	50.3
115-day	84.5	71.3	63.2	56.1	51.1
125-day	88.3	74.6	65.8	59.5	54.8
140-day	90.9	77.0	67.7	61.5	56.1
Mean	86.9	73.3	64.4	58.1	53.1

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	83.3	90.6	81.4	93.8	86.4	85.5	100.6	88.1	81.3	77.6
Apr. 20	77.5	76.1	69.7	80.0	72.9	72.3	82.3	66.1	72.0	63.7
May 10	65.3	67.3	64.6	64.6	67.8	60.4	75.8	56.3	62.6	59.8
June 1	60.4	56.3	58.1	57.1	59.9	57.4	60.8	61.4	55.9	53.8
June 20	50.8	52.1	54.6	53.8	55.0	52.4	55.1	52.5	54.6	49.7

Table 5 Cont.

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Mean	67.5	68.5	65.7	69.9	68.4	65.6	74.9	64.9	65.3	60.9

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	64.3	64.9	69.3	71.3
1956	64.8	65.8	70.9	72.4
1957	62.5	62.9	67.7	69.5
1958	66.6	67.7	71.5	73.6
1959	64.6	69.0	69.7	70.8
1960	62.7	63.0	67.4	69.2
1961	72.2	72.7	75.9	78.9
1962	62.5	63.4	65.4	68.2
1963	62.3	63.2	66.6	69.0
1964	58.5	59.6	62.3	63.6
Mean	64.1	65.2	68.7	70.7

APPENDIX TABLE 6--SUMMARY OF AVERAGE NUMBER OF DAYS FROM PLANTING TO SILKING
FOR THE DATES-OF-PLANTING STUDY CONDUCTED FOR THE 10 YEAR PERIOD
(1955-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	84.2	71.0	61.8	56.3	51.5
115-day	86.1	72.6	64.2	57.6	53.1
125-day	90.0	76.3	67.7	61.1	56.5
140-day	93.2	79.5	70.6	63.2	58.4
Mean	88.4	74.9	66.1	59.6	54.9

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	84.1	94.1	83.3	93.9	86.0	88.4	103.0	88.1	82.9	80.2
Apr. 20	78.6	78.9	72.3	79.8	72.8	74.8	84.0	66.6	74.6	66.6
May 10	66.3	69.6	66.3	66.1	66.5	62.7	77.8	56.9	65.0	63.7
June 1	61.6	58.0	60.1	57.4	59.1	59.5	62.9	62.1	57.9	57.1
June 20	52.3	55.0	55.8	54.1	55.9	54.7	55.9	53.5	58.0	53.4
Mean	68.6	71.1	67.6	70.3	68.1	68.0	76.7	65.4	67.7	64.2

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	65.2	65.9	70.4	72.7
1956	66.6	68.7	73.4	75.8
1957	63.4	64.9	70.1	71.8
1958	66.0	68.2	72.5	74.8
1959	63.7	66.1	70.0	72.4
1960	64.1	66.0	69.8	72.1
1961	73.1	75.0	76.8	81.7
1962	62.5	64.1	65.9	69.2
1963	64.4	65.3	69.2	71.8
1964	60.6	62.7	65.7	67.7
Mean	65.0	66.7	70.4	73.0

APPENDIX TABLE 7--SUMMARY OF SHELLING PERCENT FOR DATES-OF-PLANTING STUDY
 CONDUCTED FOR THE 9 YEAR PERIOD (1955-57-58-59-60-61-62-63-64) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	83.7	83.9	83.8	82.0	77.1
115-day	81.6	82.4	82.0	79.8	75.7
125-day	82.7	82.5	81.7	80.2	76.8
140-day	83.7	83.8	82.3	81.4	76.9
Mean	82.9	83.2	82.5	80.9	76.6

Planting Date	Year								
	1955	1957	1958	1959	1960	1961	1962	1963	1964
Apr. 1	81.8	84.3	85.6	83.0	85.0	83.0	82.5	81.6	79.7
Apr. 20	81.7	83.6	85.5	83.6	85.4	84.2	82.0	82.0	80.4
May 10	80.4	82.2	85.0	83.4	85.2	82.0	82.3	81.3	79.9
June 1	81.8	82.6	85.8	79.4	83.2	81.2	79.8	78.7	75.2
June 20	79.6	78.8	82.8	71.6	80.9	77.9	77.8	69.6	70.4
Mean	81.1	82.3	84.9	80.2	83.9	81.7	80.9	78.6	77.0

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	81.6	80.3	80.2	81.5
1957	82.9	81.4	82.0	82.9
1958	86.1	84.5	84.4	84.7
1959	81.1	78.8	80.0	81.0
1960	84.9	83.6	83.2	84.2
1961	83.2	80.8	81.0	81.6
1962	80.7	80.2	80.6	82.0
1963	79.1	77.7	78.5	79.2
1964	78.5	75.8	77.1	77.6
Mean	82.0	80.3	80.8	81.6

APPENDIX TABLE 8--SUMMARY OF AVERAGE TEST WEIGHT FOR DATES-OF-PLANTING STUDY
 CONDUCTED FOR THE 7 YEAR PERIOD (1958-1964) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	58.3	58.3	57.2	55.8	52.0
115-day	58.8	58.8	57.9	56.4	53.5
125-day	59.0	58.9	58.2	56.8	52.9
140-day	57.5	57.2	56.2	55.4	50.7
Mean	58.4	58.3	57.4	56.1	52.5

Planting Date	Year						
	1958	1959	1960	1961	1962	1963	1964
Apr. 1	57.5	59.1	58.1	59.9	58.0	57.8	58.5
Apr. 20	57.3	59.4	58.5	59.9	58.1	57.1	57.9
May 10	57.2	58.1	58.1	58.9	57.9	56.2	55.3
June 1	57.8	56.5	56.6	59.2	53.7	54.7	54.5
June 20	56.3	47.8	54.7	56.0	53.1	50.9	50.5

Table 8 Cont.

	1958	1959	1960	1961	1962	1963	1964
Mean	57.2	56.2	57.2	58.8	56.2	55.3	55.3

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1958	57.1	57.5	58.1	56.2
1959	55.9	56.7	56.5	55.6
1960	57.3	57.6	57.8	56.0
1961	59.0	59.7	59.5	56.8
1962	56.0	56.3	56.9	54.9
1963	55.2	56.0	56.4	54.2
1964	55.3	56.0	56.5	54.1
Mean	56.5	57.1	57.4	55.4

APPENDIX TABLE 9--SUMMARY OF AVERAGE EARWORM PENETRATION GRADE FOR DATES-OF-PLANTING STUDY CONDUCTED FOR THE 9 YEAR PERIOD (1955-56-57-59-60-61-62-63-64) NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	2.8	2.7	3.5	4.8	4.9
115-day	2.6	2.8	3.8	4.9	4.7
125-day	2.4	2.7	3.6	4.4	4.4
140-day	2.1	2.5	3.3	3.8	3.8
Mean	2.5	2.7	3.6	4.5	4.5

Planting Dates	Year								
	1955	1956	1957	1959	1960	1961	1962	1963	1964
Apr. 1	2.6	4.5	1.9	3.1	1.5	2.1	1.5	1.6	3.2
Apr. 20	3.1	4.0	2.7	3.6	1.2	2.0	1.2	2.9	3.4
May 10	4.0	4.4	3.4	4.5	1.5	3.5	2.0	3.7	4.9
June 1	4.0	5.1	4.7	4.6	4.3	3.5	4.6	4.5	4.8
June 20	4.3	5.2	4.5	4.5	4.5	3.3	4.3	4.6	4.9
Mean	3.6	4.6	3.4	4.1	2.6	2.9	2.7	3.5	4.2

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	3.9	3.8	3.6	3.0
1956	5.0	4.9	4.5	4.2
1957	3.4	3.6	3.5	3.2
1959	4.3	4.3	3.9	3.7
1960	2.8	2.8	2.6	2.2
1961	2.9	3.1	3.0	2.5
1962	3.0	2.9	2.8	2.3
1963	3.6	3.8	3.5	3.0
1964	4.5	4.5	4.1	3.6
Mean	3.7	3.7	3.5	3.1

APPENDIX TABLE 10--SUMMARY OF THE NUMBER OF EUROPEAN CORN BORER TUNNELS
PER 10 PLANTS FOR DATES-OF-PLANTING STUDY CONDUCTED FOR THE 9 YEAR
PERIOD NEAR SIKESTON, MISSOURI

Maturity Group	Planting Date				
	Apr. 1	Apr. 20	May 10	June 1	June 20
90-day	20.0	21.8	37.6	54.2	66.3
115-day	21.6	25.4	39.6	61.1	66.6
125-day	24.7	29.7	50.1	64.4	72.6
140-day	29.1	31.4	50.9	62.8	70.5
Mean	23.9	27.1	44.1	60.6	69.0

Planting Date	Year									
	1955	1956	1957	1958	1959	1960	1961	1963	1964	
Apr. 1	14.6	35.4	11.1	22.4	4.8	10.8	17.7	20.2	77.8	
Apr. 20	20.1	46.0	4.8	22.9	5.5	15.0	15.0	28.7	85.7	
May 10	59.5	81.0	29.3	29.0	9.2	29.0	21.8	40.9	102.3	
June 1	98.5	73.3	31.2	27.1	10.1	58.8	25.2	67.1	154.5	
June 20	161.6	58.8	44.7	37.6	16.7	90.0	32.7	64.5	114.6	
Mean	70.9	58.9	24.2	27.8	9.3	40.5	22.5	44.3	107.0	

Year	Maturity Group			
	90-Day	115-Day	125-Day	140-Day
1955	65.5	67.5	73.0	75.4
1956	52.3	53.6	64.1	65.5
1957	21.8	24.1	23.3	27.7
1958	23.5	26.4	32.2	29.1
1959	7.2	7.8	9.8	12.2
1960	33.0	39.4	43.7	45.8
1961	21.7	21.9	24.3	22.1
1963	33.0	41.6	49.1	53.3
1964	99.8	103.4	115.3	109.4
Mean	39.8	42.9	48.3	48.9