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Growth, Yield and Date of Planting Studies With Irrigated Soybean Varieties in Southeast Missouri

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SUMMARY

A date of planting experiment with irrigation was conducted at Portageville, MO, from 1972 to 1974 to study growth characteristics and yield of early (Custer, Clark 63), mid-season (Essex, Mack, Forrest, York), and full-season (Lee 68, Pickett 71) soybean varieties.

Plantings were made on eight dates beginning in late April and ending in early July. The findings from this experiment follow:

1. Mid-season soybean varieties yielded best and lowest yields were shown by early varieties. Mid- and full-season varieties yielded best at the early dates of planting. The early indeterminate varieties yielded less than later among varieties regardless of maturity class at the July 5 planting date. Large reduction in yield occurred when planting was delayed beyond June 15 for early and mid-season varieties, and beyond June 25 for full-season varieties.
2. Full season varieties showed less delay in maturity as planting was delayed than early varieties. Each 10-day delay in planting after April 25 delayed early, mid-season, and full-season varieties, four, two and a half, and one days, respectively.
3. Varieties were tallest at medium planting dates and generally lodged more with delayed planting. Seed quality, especially in early varieties, improved with delay in planting.
4. For each 10-day delay in planting after April 25 flowering was delayed an average of eight, seven, and five days for early, mid-season, and full-season varieties, respectively. The early, indeterminate varieties flowered sooner and longer than mid-season and full-season varieties at all planting dates. Length of flowering period decreased as planting was delayed.
5. Date of beginning pod fill ranged from July 23 for early varieties planted April 25 to September 11 for full-season varieties planted July 5. While flowering period was longer in the early, indeterminate, varieties, length of the pod filling period was shorter, compared to the mid-season and full-season varieties.
6. Fruiting period was generally longer in later maturing varieties than in early varieties. Differences in length of growing season between full-season and early varieties decreased as planting was delayed.

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Growth, Yield and Date of Planting Studies With Irrigated Soybean Varieties in Southeast Missouri

CHARLES E. KRUSE, J. GROVER SHANNON, LEO A. DUCLOS*

Soybeans are planted in southeast Missouri from April 20 to July 10. Dates of planting in non-irrigated soybeans have been reviewed (2). Tests in the midwest show that full season varieties planted in May tend to yield better than later planted soybeans. In the south early plantings generally do not produce higher yields than plantings made in May or early June (2). Southeast Missouri is located in the transition zone between the North and South. Both indeterminate soybeans (grown mostly in the North) and determinate soybeans (grown mostly in the South) are grown in Southeast Missouri.

Growth and yield of soybeans are closely related to available soil moisture. Soybean yields are affected most when moisture supply is limiting during the late flowering and pod-filling growth stages (1). Therefore, yields of a particular soybean variety planted at different dates often depend on moisture availability during these stages.

We studied the effect of planting date on yield and growth of soybeans where moisture supply was kept adequate by supplemental irrigation.

MATERIALS AND METHODS

A date of planting study was conducted on a Tiptonville Silt Loam soil planted at Portageville, MO, from 1972 to 74. A three-replicate split-plot design was used with dates of planting as whole plots and varieties as sub-plots.

All varieties were planted at a rate of eight seeds per linear foot of row in rows spaced 30 inches apart. Plots were three rows 20-feet long. A 16-foot section of the center row was harvested for yield. Plots were irrigated twice each year. Rainfall was adequate in August and September, thus eliminating the need for supplemental water during these months in all three years. Eight dates starting in

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late April and ending in early July were planted in 1972 and 1974. Wet conditions in mid-May and early June permitted only six dates in 1973.

Early frost in 1974 damaged mid-season and especially full soybean varieties planted at the late dates.

Characteristics measured on each plot follow:

Yield: Recorded as grams per plot and converted to bushels per acre.

Maturity: Varieties were dated mature when 95% of the pods were ripe and all leaves had fallen.

Height: Height of the plant in inches from the ground to the top of the last pod.

Lodging: Scores were based on the average erectness of the main stem at maturity as follows: 1 = all plants erect, 2 = slight lodging, 3 = plants lodged at 45° angle, 4 = severe lodging, 5 = all plants lodged flat.

Seed Quality: Visual appearance of seed was rated according to brightness, wrinkling, and mold growth on seed. Seed quality scores were rated as follows: 1 = very good, 2, = good, 3 = fair, 4 = poor, 5 = very poor.

Flowering Date: Recorded as date when 10% of plants had at least 1 open bloom.

Flowering Period: Number of days from the first flower until last bloom.

Pod-Filling Period: Number of days from date of beginning pod-fill to maturity.

Fruiting Period: Number of days from first flower to maturity.

Days From Planting to Maturity: Number of days from planting to maturity.

Analyses of variance combined over the three years were calculated using all varieties except Custer (poor seed germination in 1974) and Essex (grown only in 1973 and 1974). In the combined analyses only six of eight planting dates could be used in analyses of variance since May 15 and June 5 dates were not planted in 1973. All data were analyzed through use of the facilities of the University of Missouri-Columbia Computer Center.

RESULTS AND DISCUSSIONS

Yield

Influence of planting date on variety:

Figure 1 shows mean yield of early, mid-season and full-season soybean varieties planted on six dates and averaged over three years. Highest yields were shown by mid-season varieties (Essex, Mack, Forrest, and York) and lowest yields were shown by the early varieties (Clark 63 and Custer). The early varieties yielded best at the May 25 and June 15 planting dates. Significant yield reductions did not occur unless planting was after June 15 for early and mid-season varieties and after June 25 for full-season varieties.

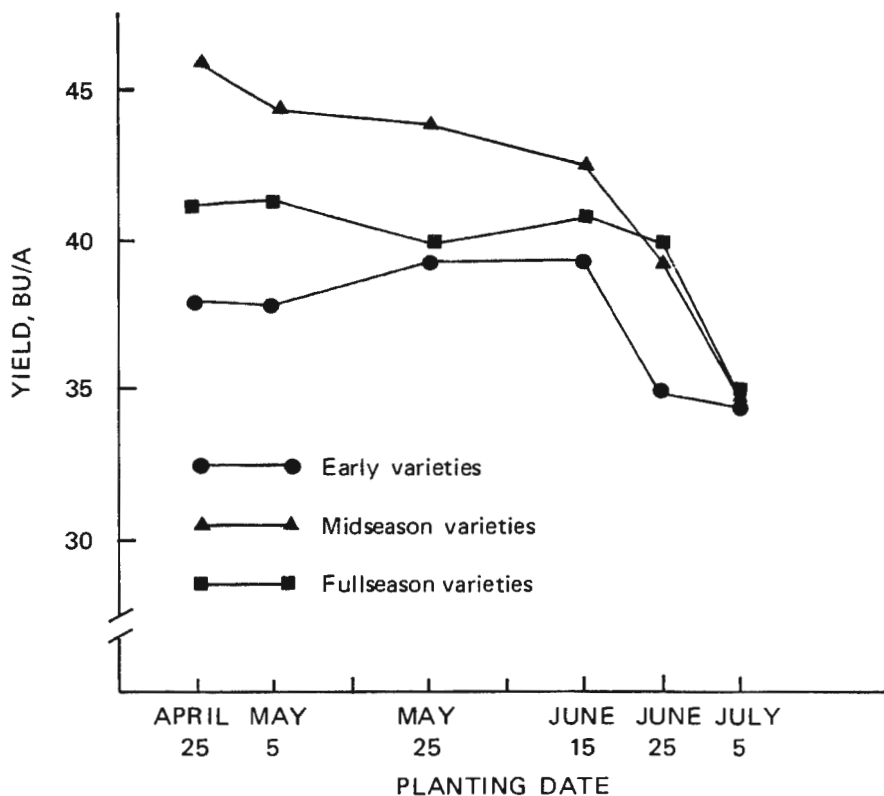


FIGURE 1 - Yield response of soybean varieties planted at six dates, Portageville, Mo., 1972 - 1974.

Highest mean yields in mid- (45.7 bu/A) and full-season (41.5 bu/A) varieties were at the late April and early May planting dates and were gradually lower as seeding was delayed. This indicates that where moisture is available throughout the season, mid-season and full-season soybean varieties yield best when planted early. Average yield was near or above 40 bushels per acre for mid- and full-season soybeans unless planting was after June 25. All varieties were similar in yield when planted about July 5 regardless of maturity class.

The early, indeterminate varieties did not vary as much in yield from the early to late plantings as did the later determinate varieties. This indicates if moisture is not a limiting factor, the indeterminate varieties may provide a more stable,

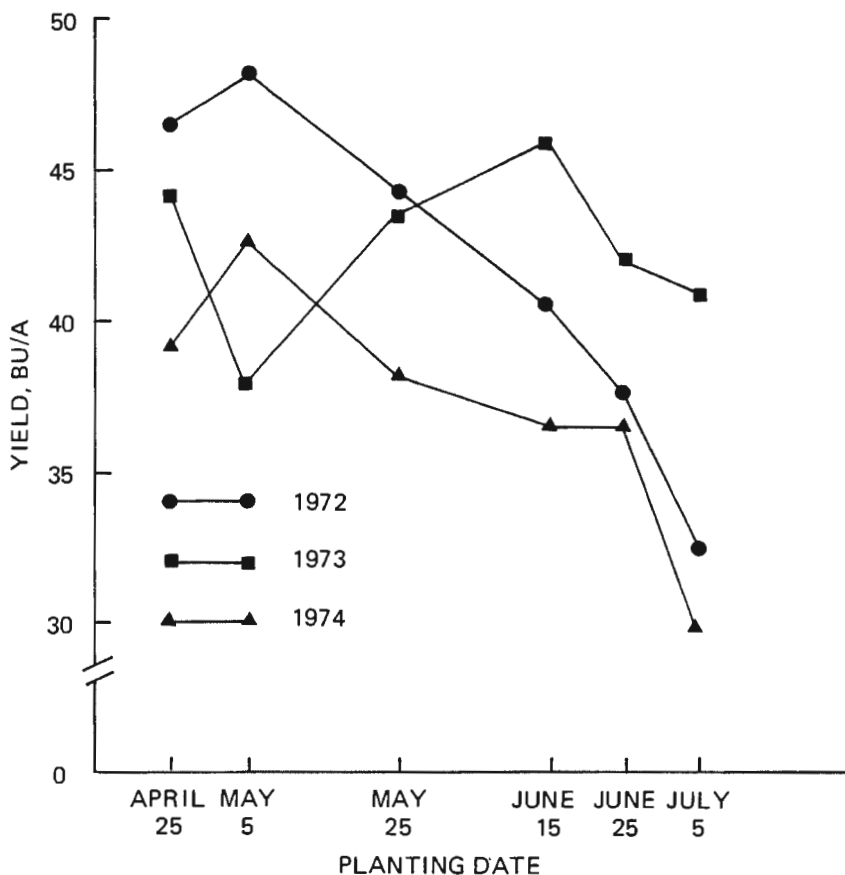


FIGURE 2 - Mean yield of six soybean varieties planted at six dates, Portageville, Mo., 1972, 1973, and 1974.

but lower, yield response over a wide range of planting dates than determinate varieties.

Influence of year on planting date:

Mean yields of six soybean varieties planted on six dates for 1972, 1973, and 1974 are presented in Figure 2. Highest yields in 1972 and 1974 were at the early May plantings. The yields were progressively lower as planting was delayed. Data for 1973 show that except for May 5, yields were relatively constant over the season. Yields were low for May 5, 1973, due to poor stands as a result of heavy rain. Other factors are more important than moisture availability in affecting yield response to planting dates in some years.

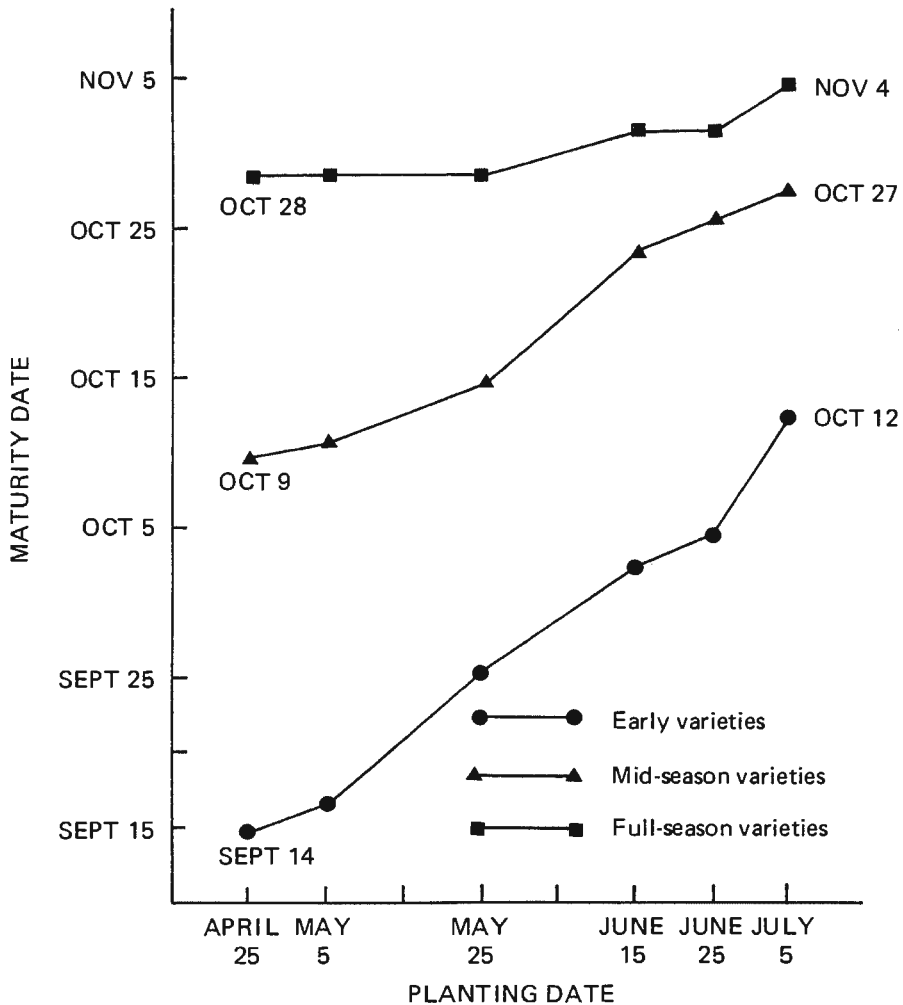


FIGURE 3 - Response of maturity date of soybean varieties planted at six dates, Portageville, Mo., 1972 - 1974.

Maturity: Full season varieties showed less delay in maturity than early varieties as planting was delayed (Fig. 3). Early, mid-season and full-season varieties used in these studies averaged 28, 18, and 7 days later in maturity, respectively, when planted July 5 compared with April 25. Based on these data, a 10 day delay in planting after April 25 would delay maturity approximately 4, 2.5 and 1 day for the early, mid-season and full-season varieties, respectively.

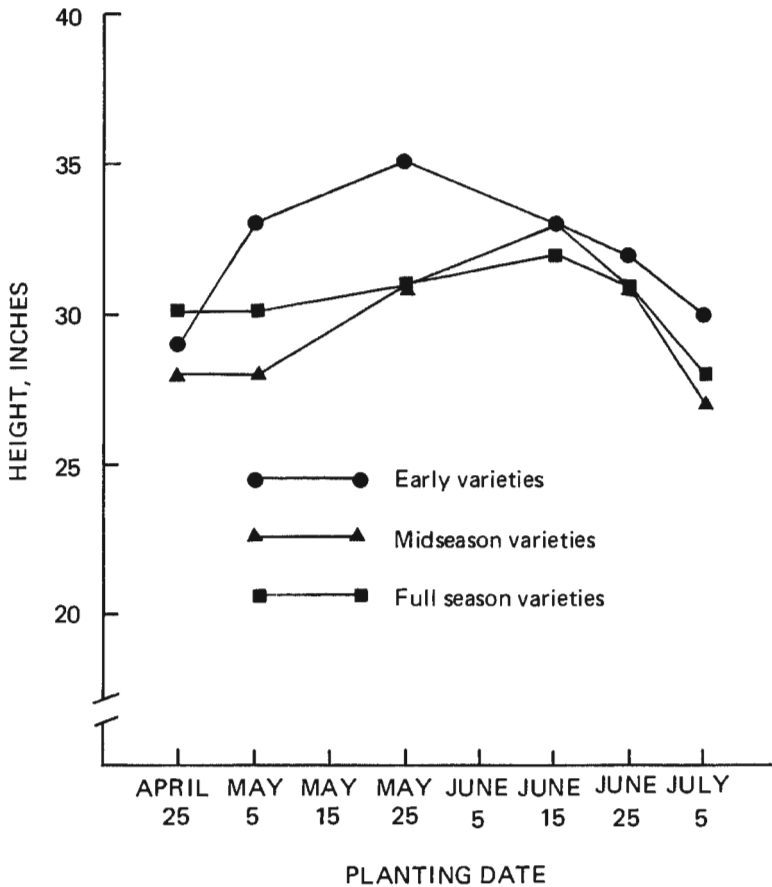


FIGURE 4 - Height response of soybean varieties planted at six dates, Portageville, Mo., 1972 - 1974.

Height: The tallest plants resulted from the May 25 planting date for early varieties and at the June 15 date for mid-season and full-season varieties (Fig. 4). This agrees with other studies. Plant height is usually greatest for medium planting dates (2). Plants were shortest for the April 25 and July 5 planting dates.

The indeterminate (early) varieties generally were taller at all planting dates than the determinate varieties.

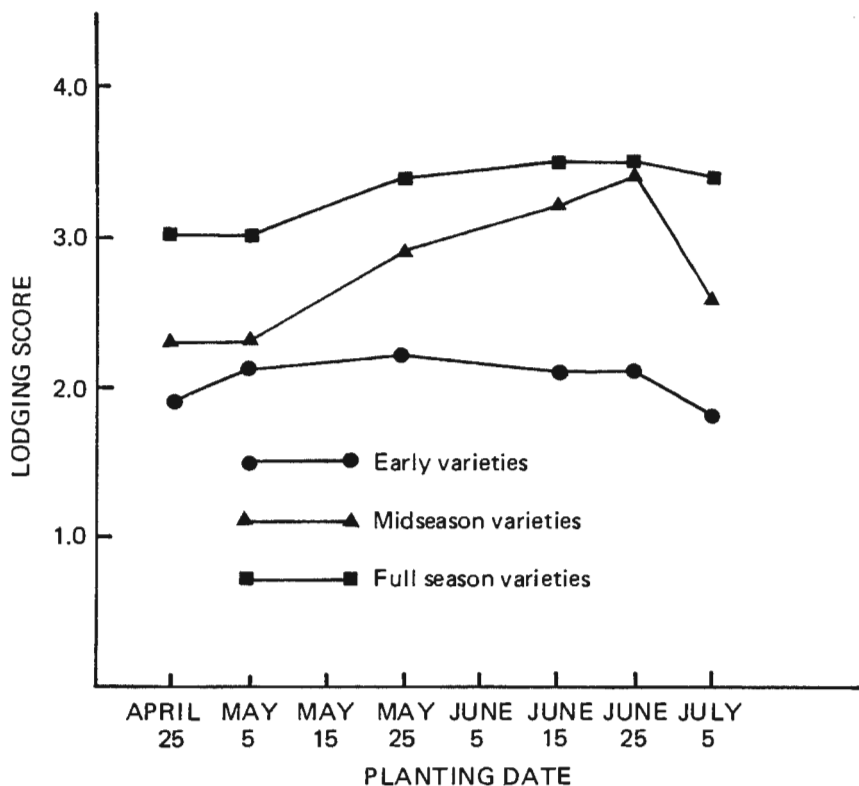


FIGURE 5 - Lodging response of soybean varieties planted at six dates, Portageville, Mo., 1972 - 1974.

Lodging: Lodging increased as planting was delayed until June 25 (Fig. 5). At the July 5 date lodging decreased. Similar responses of lodging to planting date have been found in other studies (2). Lodging was generally greatest at planting dates where plants grew tallest in all varieties.

Early varieties showed little difference in lodging for dates of planting as compared to mid- and full-season varieties.

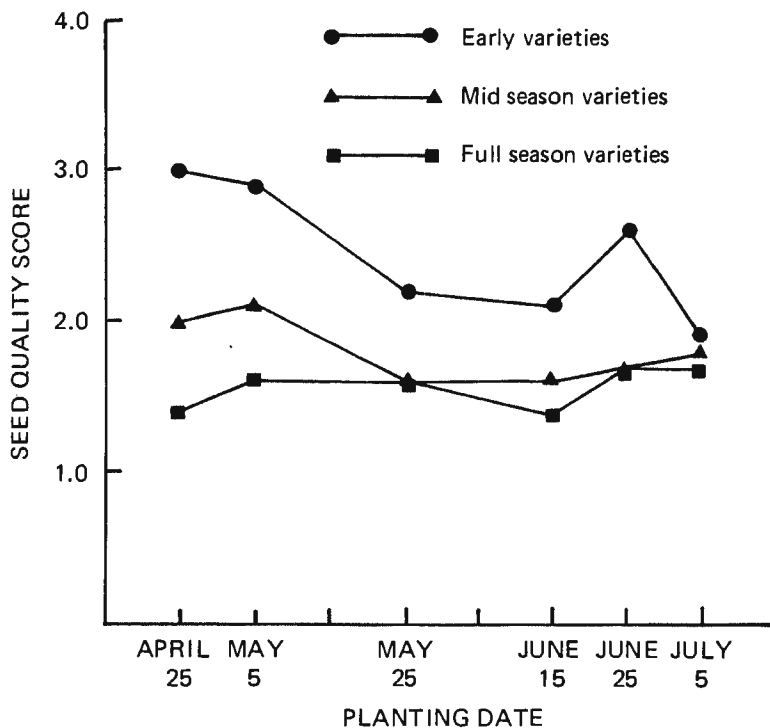


FIGURE 6 - Response of seed quality of soybean varieties planted at six dates, Portageville, Mo., 1972 - 1974.

Seed Quality: Seed quality was generally highest when soybeans were planted after mid-May (Fig. 6). Early varieties had greatest seed quality improvement as planting was delayed compared to mid- and full-season varieties. Seed quality did not vary much in full-season varieties over dates of planting.

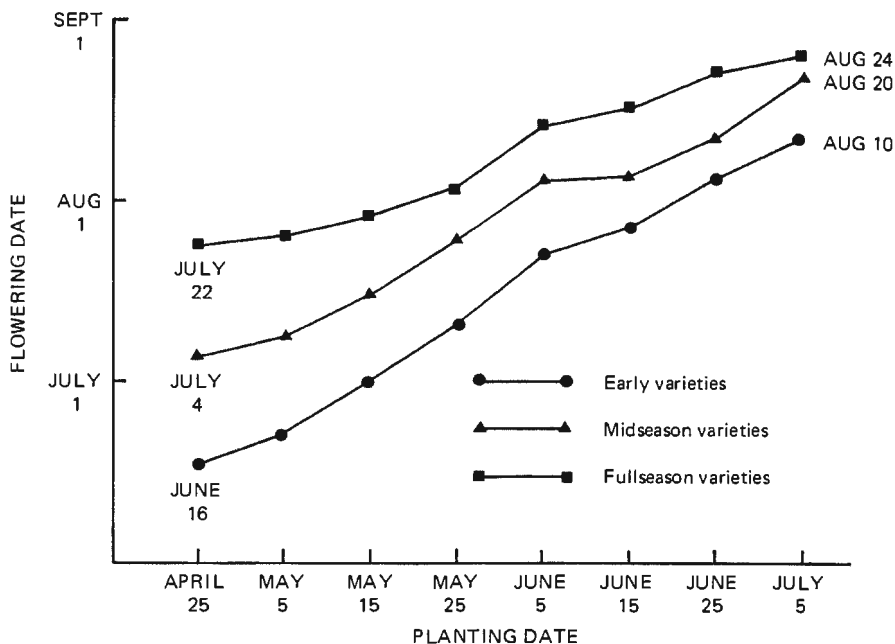


FIGURE 7 - Response of flowering date of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 1974.

Flowering Date: Soybeans flowered as early as June 16 and as late as August 24 (Fig. 7). Early varieties flowered first and late varieties were last at each planting date. Flowering date was delayed 55, 47, and 33 days, respectively, in early, mid-season, and full-season varieties as planting was delayed from April 25 to July 5. For each 10-day delay in planting after April 25, flowering was delayed approximately eight, seven, and five days, respectively, for the early mid-season and full-season varieties.

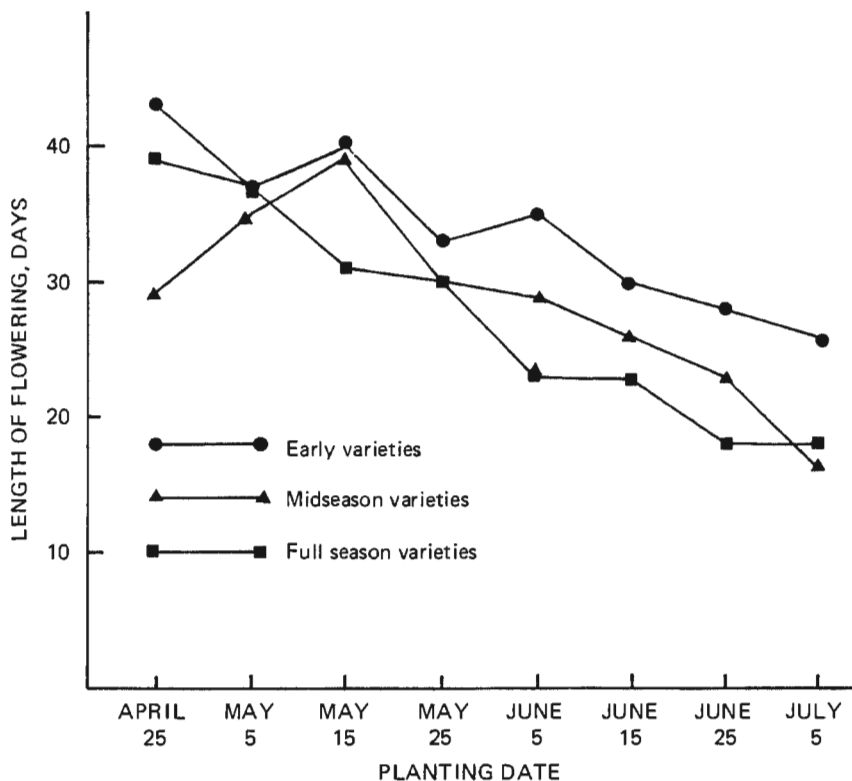


FIGURE 8 - Response of flowering period, in days, of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 1974.

Length of Flowering: The length of the flowering period for the early varieties was equal to or longer than mid- and full-season varieties regardless of planting date (Fig. 8). This longer flowering period was probably due to the indeterminate growth habit of the early varieties as compared to the determinate growth habit of the later maturing varieties studied. Generally, length of flowering period decreased as planting was delayed except for the mid-season varieties. We can give no explanation as to why the mid-season varieties flowered longest at the May 15 date and progressively shorter at earlier or later plantings.

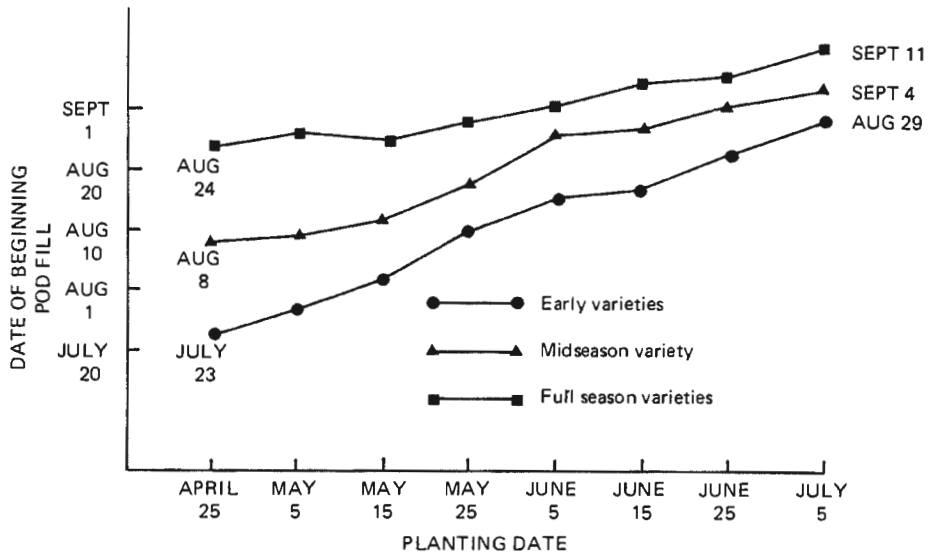


FIGURE 9 - Response of date of beginning pod fill of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 74.

Date of Beginning Pod-fill: Date of initial pod-filling is an important growth stage in soybeans. Pod-filling is the stage where adequate water is most critical for high soybean yield (1). As planting was delayed, from April 25 to July 5, date of beginning pod-fill was delayed most for the early varieties and least for the full-season varieties studied (Fig. 9). Date of beginning pod-fill ranged from July 23 to August 29 (early varieties), August 8 to September 4 (mid-season varieties), and August 24 to September 11 (full-season varieties).

A 10-day delay in planting after April 25 delayed date of pod-fill an average of five, four, and two and a half days, respectively, for the early, mid-season, and full-season soybean varieties.

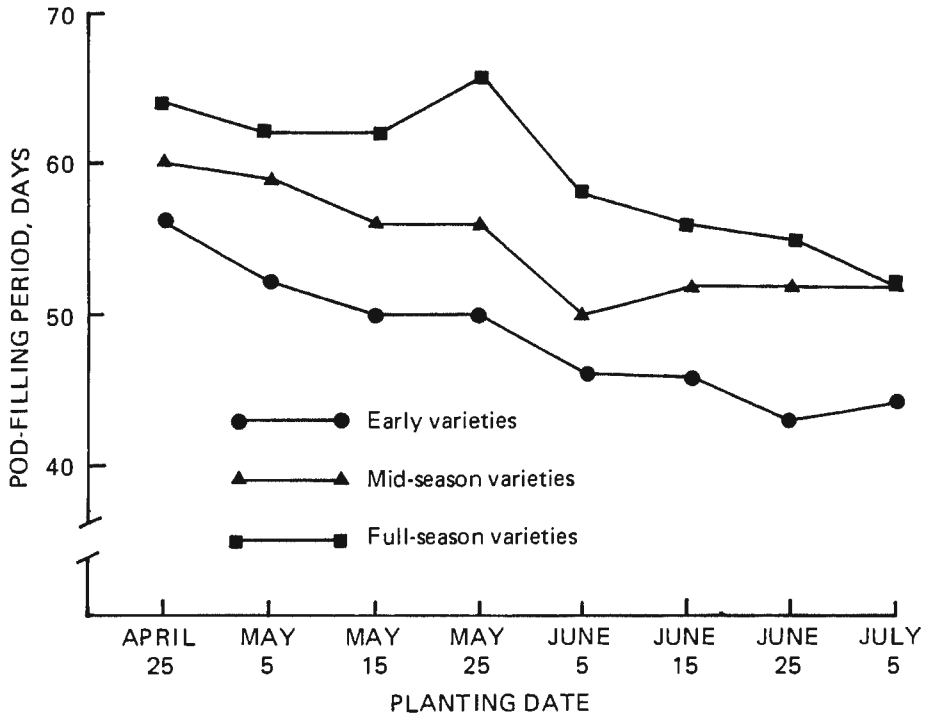


FIGURE 10 - Response of pod-filling period of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 74.

Pod-filling Period: Delay in planting from late April to early July decreased the length of the pod-filling period only 8 to 12 days in all varieties (Fig. 10). Flowering period was longer for the early varieties (Fig. 8), but pod-filling was shorter than for mid- and full-season varieties. Full-season varieties showed the longest pod-filling period.

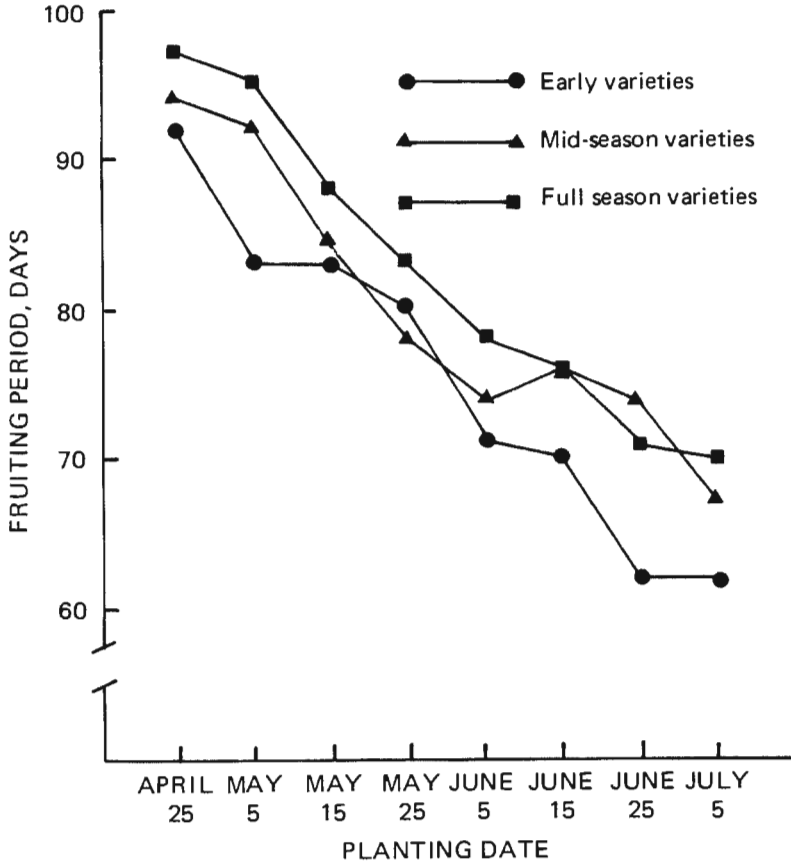


FIGURE 11 - Response of fruiting period of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 74.

Fruiting Period: As planting was delayed from late April to early July, the fruiting period was decreased from 92 to 62 days for early varieties, 94 to 67 days for mid-season varieties and 97 to 70 days for full-season varieties (Fig. 11). The full-season varieties generally had the longest fruiting period and early varieties the shortest. However, differences in fruiting period between early and later maturing varieties were not of great magnitude at the medium planting dates.

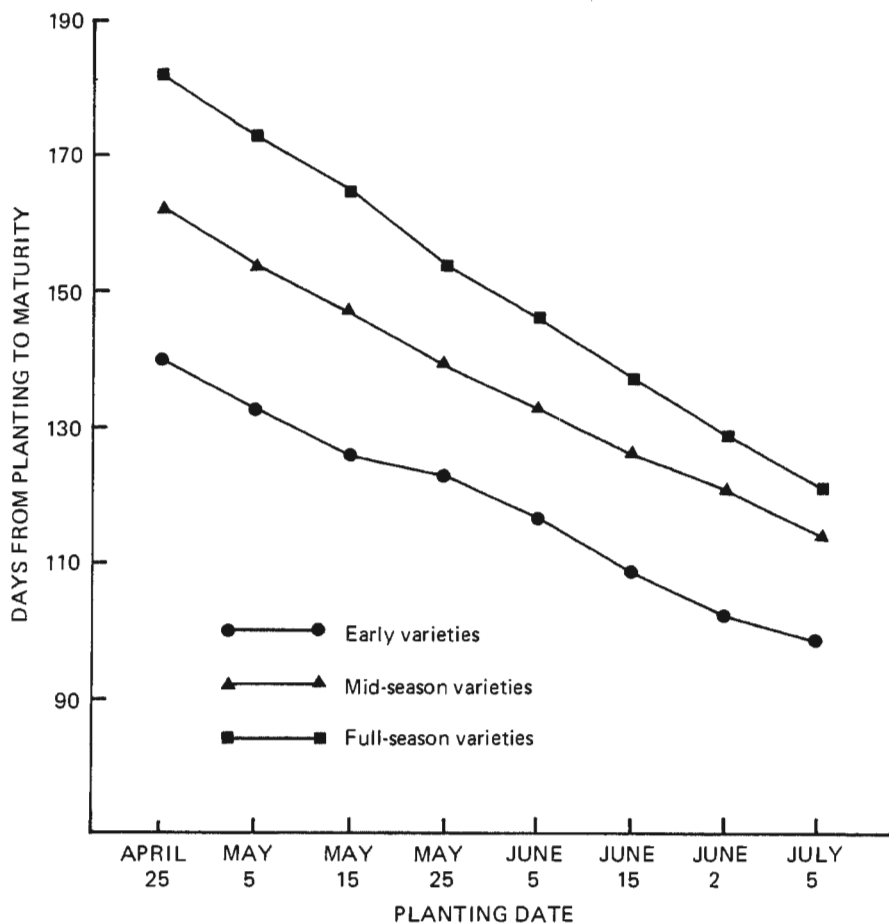


FIGURE 12 - Response of number of days from planting to maturity of soybean varieties planted at eight dates, Portageville, Mo., 1972 - 74.

Days From Planting to Maturity: Delay in planting from late April to early July shortened growing season from 140 to 98 days for early varieties, from 162 to 114 days for mid-season varieties and from 182 to 121 days for full-season varieties. The differences in growing seasons between early and full-season varieties was 42 days at the April 25 planting date and only 23 days at the July 5 planting date. Each 10-day delay in planting shortened growing season on average of 6, 7, and 9 days, respectively, for early, mid-season, and full-season varieties.

LITERATURE CITED

1. Mederski et. al. 1973 Water and Water Relations p. 247-249. In B. E. Caldwell (ed.) Soybeans: Improvement Production, Management and Uses. Amer. Soc. of Agron., Madison, Wisc.
2. Pendleton, J. W. and Edgar E. Hartwig 1973. Management p. 211-224 In B. E. Caldwell (ed.) Soybeans: Improvement, Production, Management and Uses: Amer. Soc. of Agron., Madison, Wisc.

APPENDIX

TABLE 1 - YIELD OF SOYBEAN VARIETIES PLANTED ON EIGHT DATES
PORTAGEVILLE, 1972 - 1974

VARIETY	April 25	May 5	May 15	May 25	June 5	June 15	June 25	July 5	Range
	Date 1	Date 2	Date 3	Date 4	Date 5	Date 6	Date 7	Date 8	Low to High
	<u>YIELD BU/A</u>								
<u>EARLY</u>									
Clark 63	34.4	36.8	34.5*	38.1	41.5*	39.5	33.0	32.8*	5.6
Custer	41.4	38.8*	35.0**	40.7*	36.3*	39.3	36.5*	35.9*	5.5
AVERAGE	37.9	37.8	34.8	39.4	38.9	39.4	34.8	34.4	5.6
<u>MID-SEASON</u>									
Essex ^{1/}	39.9*	40.1*	35.8*	41.0*	41.7**	43.4*	37.3*	34.7*	8.7
Mack	48.0	46.3	44.5*	45.3	35.7*	43.6	39.0	35.6	12.4
Forrest	50.8	48.8	47.9*	46.4	43.2*	42.4	42.0	36.3	14.5
York	44.1	42.0	42.8*	42.9	43.2*	40.5	38.8	32.5	11.6
AVERAGE	45.7	44.3	42.8	43.9	41.0	42.5	39.3	34.8	10.9
<u>FULL-SEASON</u>									
Lee 68	40.1	40.7	38.3*	37.9	38.3*	40.1	36.2	34.4	6.3
Pickett 71	42.5	42.2	39.6*	41.6	35.4*	41.3	43.4	35.1	8.3
AVERAGE	41.3	41.5	39.0	39.8	36.9	40.7	39.8	34.8	6.7

* 2 Year average of 1972 and 1974.

** 1974 data only

^{1/} Hill in 1972, Essex 1973, and 1974.

TABLE 2 - MATURITY OF SOYBEAN VARIETIES PLANTED ON SIX DATES, PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/25 Date 3	6/15 Date 4	6/25 Date 5	7/5 Date 6
<u>Early</u>						
Clark 63	Sept. 14	Sept. 16	Sept. 25	Oct. 2	Oct. 4	Oct. 12
<u>Mid-Season</u>						
Mack	Oct. 7	Oct. 8	Oct. 13	Oct. 20	Oct. 23	Oct. 26
Forrest	Oct. 8	Oct. 10	Oct. 14	Oct. 23	Oct. 28	Oct. 30
York	Oct. 11	Oct. 12	Oct. 16	Oct. 25	Oct. 25	Oct. 26
Average	Oct. 9	Oct. 10	Oct. 14	Oct. 23	Oct. 25	Oct. 27
<u>Full-Season</u>						
Lee 68	Oct. 27	Oct. 27	Oct. 28	Oct. 29	Oct. 30	Nov. 2
Pickett 71	Oct. 28	Oct. 29	Oct. 28	Oct. 31	Oct. 30	Nov. 5
Average	Oct. 28	Oct. 28	Oct. 28	Oct. 30	Oct. 30	Nov. 4

TABLE 3 - HEIGHT OF SOYBEAN VARIETIES PLANTED ON SIX DATES, PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/25 Date 3	6/15 Date 4	6/25 Date 5	7/5 Date 6
<u>Early</u>						
Clark 63	29	33	35	33	32	30
<u>Mid-Season</u>						
Mack	27	28	31	33	31	28
Forrest	31	29	32	35	33	29
York	26	27	31	30	29	24
Average	28	28	31	33	31	27
<u>Full-Season</u>						
Lee 68	29	30	31	32	32	28
Pickett 71	31	29	31	32	29	28
Average	30	30	31	32	31	28

TABLE 4 - LODGING SCORES OF SOYBEAN VARIETIES PLANTED ON SIX DATES, PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/25 Date 3	6/15 Date 4	6/25 Date 5	7/5 Date 6
<u>Early</u>						
Clark 63	1.9	2.1	2.2	2.1	2.1	1.8
<u>Mid-Season</u>						
Mack	3.2	3.3	3.4	3.8	3.7	3.2
Forrest	1.8	2.3	2.9	3.3	3.6	2.6
York	1.8	1.4	2.4	2.4	2.8	2.0
Average	$\overline{2.3}$	$\overline{2.3}$	$\overline{2.9}$	$\overline{3.2}$	$\overline{3.4}$	$\overline{2.6}$
<u>Full-Season</u>						
Lee 68	2.9	2.9	3.4	3.6	3.3	3.4
Pickett 71	3.1	3.1	3.3	3.4	3.6	3.3
Average	$\overline{3.0}$	$\overline{3.0}$	$\overline{3.4}$	$\overline{3.5}$	$\overline{3.5}$	$\overline{3.4}$

TABLE 5 - SEED QUALITY SCORES OF SOYBEAN VARIETIES PLANTED ON SIX DATES, PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/25 Date 3	6/15 Date 4	6/25 Date 5	7/5 Date 6
<u>Early</u>						
Clark 63	3.0	2.9	2.2	2.1	2.6	1.9
<u>Mid-Season</u>						
Mack	1.9	1.9	1.5	1.6	1.6	1.6
Forrest	2.3	2.4	1.7	1.7	1.8	2.0
York	1.8	2.0	1.6	1.6	1.6	1.7
Average	$\overline{2.0}$	$\overline{2.1}$	$\overline{1.6}$	$\overline{1.6}$	$\overline{1.7}$	$\overline{1.8}$
<u>Full-Season</u>						
Lee 68	1.4	1.7	1.5	1.3	1.6	1.7
Pickett 71	1.4	1.4	1.7	1.5	1.8	1.7
Average	$\overline{1.4}$	$\overline{1.6}$	$\overline{1.6}$	$\overline{1.4}$	$\overline{1.7}$	$\overline{1.7}$

TABLE 6 - FLOWERING DATE OF SOYBEAN VARIETIES PLANTED ON EIGHT DATES,
PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/25 Date 7	7/5 Date 8
<u>Early</u>								
Clark 63	6/14	6/19	6/25*	7/8	7/20*	7/25	8/2	8/9
Custer	6/17	6/22	7/4 *	7/9	7/22*	7/27	8/5	8/11
Average	$\overline{6/16}$	$\overline{6/21}$	$\overline{7/1}$ *	$\overline{7/9}$	$\overline{7/21}$ *	$\overline{7/26}$	$\overline{8/4}$	$\overline{8/10}$
<u>Mid-Season</u>								
Essex ^{1/}	7/2 *	7/4 *	7/12*	7/20*	7/31*	8/2 *	8/9 *	8/19*
Mack	7/5	7/10	7/15*	7/25	8/5*	8/6	8/11	8/21
Forrest	7/4	7/7	7/14*	7/24	8/3 *	8/5	8/10	8/20
York	7/4	7/7	7/16*	7/22	8/3*	8/4	8/10	8/19
Average	$\overline{7/4}$	$\overline{7/7}$	$\overline{7/14}$ *	$\overline{7/23}$	$\overline{8/3}$ *	$\overline{8/4}$	$\overline{8/10}$	$\overline{8/20}$
<u>Full-Season</u>								
Lee 68	7/21	7/23	7/28*	7/31	8/10*	8/13	8/21	8/23
Pickett 71	7/22	7/24	7/30*	8/4	8/13*	8/17	8/20	8/24
Average	$\overline{7/22}$	$\overline{7/24}$	$\overline{7/29}$ *	$\overline{8/2}$	$\overline{8/12}$ *	$\overline{8/15}$	$\overline{8/21}$	$\overline{8/24}$

^{1/} Hill in 1972, Essex 1973 and 1974.

* Two year average 1972 and 1974.

TABLE 7 - FLOWERING PERIOD (DAYS) OF SOYBEAN VARIETIES PLANTED ON EIGHT DATES,
PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/25 Date 7	7/5 Date 8
<u>Early</u>								
Clark	41*	34	45*	31	31*	30	29	26
Custer	44*	40	35*	34	38*	30	27	26
Avg.	<u>43</u>	<u>37</u>	<u>40</u>	<u>33</u>	<u>35*</u>	<u>30</u>	<u>28</u>	<u>26</u>
<u>Mid-Season</u>								
Essex	26	27	29*	25	29*	23	21	15
Mack	32	39	42*	27	28*	26	23	16
Forrest	29	44	43*	33	28*	29	25	16
York	28	30	41*	34	29*	25	21	16
Avg.	<u>29</u>	<u>35</u>	<u>39*</u>	<u>30</u>	<u>29*</u>	<u>26</u>	<u>23</u>	<u>16</u>
<u>Full-Season</u>								
Lee 68	37	37	31*	31	24*	24	17	17
Pickett 71	41	37	30*	28	22*	21	19	18
Avg.	<u>39</u>	<u>37</u>	<u>31*</u>	<u>30</u>	<u>23*</u>	<u>23</u>	<u>18</u>	<u>18</u>

* One year average of 1974.

TABLE 8 - DATE OF BEGINNING POD FILL OF SOYBEAN VARIETIES PLANTED ON EIGHT DATES,
PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/25 Date 7	7/5 Date 8
<u>Early</u>								
Clark 63	7/18	7/23	7/30*	8/11	8/13	8/16	8/23	8/28
Custer	7/27	7/31	8/4 *	8/9	8/18	8/18	8/23	8/29
Avg.	<u>7/23</u>	<u>7/27</u>	<u>8/2 *</u>	<u>8/10</u>	<u>8/16</u>	<u>8/17</u>	<u>8/23</u>	<u>8/29</u>
<u>Mid-Season</u>								
Essex ^{1/}	8/4	8/6	8/8 *	8/11*	8/20	8/24	8/29	8/31
Mack	8/9	8/11	8/12*	8/22	8/28	8/30	9/3	9/6
Forrest	8/9	8/12	8/17*	8/21	8/30	8/28	9/3	9/8
York	8/6	8/7	8/11*	8/18	8/28	8/27	8/30	9/3
Avg.	<u>8/8</u>	<u>8/9</u>	<u>8/12*</u>	<u>8/18</u>	<u>8/26</u>	<u>8/27</u>	<u>9/1</u>	<u>9/4</u>
<u>Full-Season</u>								
Lee 68	8/22	8/24	8/25*	8/28	8/31	9/3	9/5	9/10
Pickett 71	8/25	8/27	8/25*	8/28	9/2	9/6	9/7	9/12
Avg.	<u>8/24</u>	<u>8/26</u>	<u>8/25</u>	<u>8/28</u>	<u>9/1</u>	<u>9/5</u>	<u>9/6</u>	<u>9/11</u>

^{1/} Hill in 1972, Essex 1973 and 1974.

* Two year average

TABLE 9 - POD FILLING PERIOD (DAYS) OF SOYBEAN VARIETIES PLANTED ON EIGHT DATES,
PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/25 Date 7	7/5 Date 8
<u>Early</u>								
Clark 63	58	54	50*	49	47*	46	43	46
Custer	53	48*	--	40	45*	46	42	42
Avg.	$\overline{56}$	$\overline{52}$	$\overline{50^*}$	$\overline{50}$	$\overline{46^*}$	$\overline{46}$	$\overline{43}$	$\overline{44}$
<u>Mid-Season</u>								
Essex <u>1/</u>	59	58	52*	52	45*	48	48	50
Mack	58	57	58*	53	49*	51	51	50
Forrest	59	58	52*	57	50*	52	53	51
York	65	63	60*	60	55*	57	54	55
Avg.	$\overline{60}$	$\overline{59}$	$\overline{56^*}$	$\overline{56}$	$\overline{50}$	$\overline{52}$	$\overline{52}$	$\overline{52}$
<u>Full-Season</u>								
Lee 68	65	63	61*	65	57*	56	55	51
Pickett 71	63	61	62*	67	58*	55	54	52
Avg.	$\overline{64}$	$\overline{62}$	$\overline{62^*}$	$\overline{66}$	$\overline{58^*}$	$\overline{56}$	$\overline{55}$	$\overline{52}$

1/ Hill in 1972, Essex in 1973 and 1974.

* Two years average

TABLE 10 - FRUITING PERIOD (DAYS FROM 1ST BLOOM TO MATURITY) OF SOYBEAN VARIETIES PLANTED AT EIGHT DATES, PORTAGEVILLE, 1972 - 74

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/26 Date 7	7/5 Date 8
<u>Early</u>								
Clark 63	92	83	83*	78*	71*	70	63	64
Custer	92	82*	--	81	71*	69	61*	59*
Avg.	$\overline{92}$	$\overline{83}$	$\overline{83^*}$	$\overline{80}$	$\overline{71^*}$	$\overline{70}$	$\overline{62^*}$	$\overline{62}$
<u>Mid-Season</u>								
Essex <u>1/</u>	89	87	82*	75	72*	71	70	64
Mack	93	89	85*	75	71*	74	73	66
Forrest	94	94	85*	78	77*	78	78	70
York	98	97	85*	84	77*	81	76	69
Avg.	$\overline{94}$	$\overline{92}$	$\overline{84}$	$\overline{78}$	$\overline{74}$	$\overline{76}$	$\overline{74}$	$\overline{67}$
<u>Full-Season</u>								
Lee 68	97	96	88*	87	78*	77	69	69
Pickett 71	97	94	88*	83	78*	75	72	71
Avg.	$\overline{97}$	$\overline{95}$	$\overline{88^*}$	$\overline{83^*}$	$\overline{78^*}$	$\overline{76}$	$\overline{71}$	$\overline{70}$

1/ Hill 1972, Essex 1973 and 1974.

* Two year average

TABLE 11 - DAYS FROM PLANTING TO MATURITY OF SOYBEAN VARIETIES PLANTED
AT EIGHT DATES, 1972 - 74, PORTAGEVILLE

Entry	4/25 Date 1	5/5 Date 2	5/15 Date 3	5/25 Date 4	6/5 Date 5	6/15 Date 6	6/25 Date 7	7/5 Date 8
<u>Early</u>								
Clark 63	139	132	126*	121	116*	108	101	99
Custer	141	133*	---	125	118	110	103*	98*
Avg.	<u>140</u>	<u>133</u>	<u>126</u>	<u>123</u>	<u>117</u>	<u>109</u>	<u>102</u>	<u>99</u>
<u>Mid-Season</u>								
Essex <u>1/</u>	158	149	144*	133	128*	116	116	110
Mack	162	153	147*	139	133*	126	121	113
Forrest	162	157	148*	140	136*	129	125	116
York	165	157	149*	142	136*	131	120	115
Avg.	<u>162</u>	<u>154</u>	<u>147*</u>	<u>139</u>	<u>133*</u>	<u>126</u>	<u>121</u>	<u>114</u>
<u>Full-Season</u>								
Lee 68	181	172	164*	154	145*	136	127	119
Pickett 71	182	173	165*	154	147*	138	130	122
Avg.	<u>182</u>	<u>173</u>	<u>165*</u>	<u>154</u>	<u>146*</u>	<u>137</u>	<u>129</u>	<u>121</u>

1/ Hill in 1972, Essex in 1973 and 1974.

* Two Year average