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2014

Evaluation of Planting Date as Affected by Cultivar and Row Pattern

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2014-2015 Research Report

Research work completed from beginning of season to June 30, 2015

Research work related to this project was initiated at both the Mississippi State University North Farm in Starkville, MS and at the South Mississippi Branch Experiment Station in Poplarville, MS. The initial planting date at North Farm was May 7. Subsequent planting dates were May 20, May 27, and June 3. Another date was targeted for May 13-14 but was prevented by adverse weather conditions. At each planting date, both Georgia-06G and Georgia-09B were seeded in both twin rows and single rows. All seed was treated with Dynasty fungicide seed treatment. Vault liquid inoculant was placed in furrow to ensure proper inoculation, as much of the field that these plots were planted in had never been in peanuts. Plots were two rows wide and 35 feet long. Prowl and Dual herbicides were applied prior to planting. Emergent stand counts were taken upon full emergence of each plot and days to canopy closure were monitored throughout the season. Postemergence herbicide applications included Cadre (4 oz/A) and crop oil (32 oz/A) on June 9; and Basagran (32 oz/A), Select (16 oz/A) and crop oil (32 oz/A) on June 20. Disease pressure was very low throughout the season. Fungicide applications included:

Chlorothalonil (24 oz/A) – June 24 on planting date (PD) 1, July 7 on PD2, July 17 on PD3 and PD4, July 25 on PD1

Provost (10.7 oz/A) – July 7 on PD1, July 24 on PD2, July 31 on PD3 and PD4, August 6 on PD1, August 15 on PD2, August 19 on PD 3 and 4

Planting date 1 was dug on September 22 and harvested on September 25. Planting date 2 was dug on September 29 and harvested on October 2. Planting date 3 was dug on October 6 and harvested on October 9. Planting date 4 was dug on October 17 and harvested on October 24. Harvest stand counts were taken after digging and prior to harvest for each planting date. Plots were harvested with a KMC two-row combine with bagging attachment and bags were weighed to calculate yield.

Pod yield was effected only by planting date (Table 1). As seen in Table 2, the highest yield was obtained with the May 7 planting date. The May 27 and June 3 dates both yielded less than the May 7 date, but both were similar to each other; the May 20 date yielded significantly less than all other dates. Better weather conditions during peak flowering and pod fill were the likely cause of the increased yield at the earliest planting date. The May 20 date having a yield lower than the May 27 and June 3 date was unexpected. This observation can

partially be attributed to drier conditions in the two weeks prior to harvest and at digging. This resulted in a lack of pod fill during this period and some pod loss during the digging process.

There was no yield response to cultivar (Table 3) or row pattern (Table 4) and there were no significant interactions between any factors.

Table 1. Analysis of variance for cultivar, planting date, row pattern, and their interactions effect on yield.

Effect	Degrees of Freedom	Pr > F
Cultivar (CV)	1	0.7948
Planting Date (PD)	3	<0.0001
CV x PD	3	0.8061
Row Pattern (RP)	1	0.1958
CV x RP	1	0.8078
PD x RP	3	0.8959
CV x PD x RP	3	0.6029

Table 2. Peanut yield response as effected by planting date, Starkville, 2014.

Planting Date	Yield (lb/acre)
May 7	5761 a
May 20	3498 c
May 27	4403 b
June 3	4407 b

Table 3. Peanut yield response as effected by cultivar, Starkville, 2014.

Cultivar	Yield (lb/acre)
Georgia-06G	4555
Georgia-09B	4480

Table 4. Peanut yield response as effected by row pattern, Starkville, 2014.

Row Pattern	Yield (lb/acre)
Twin Row	4706
Single Row	4329

At Poplarville, planting was initiated on May 20. Because of weather-related, equipment, and logistical issues, only one additional planting occurred on the date of June 9. Planting and stand counting practices were similar to those described earlier for the North Farm. Prowl, Dual II Magnum, and Valor were applied pre-emerge on May 20. Because of the extreme weedy nature of the field, Cadre (4 oz/A) and crop oil (32 oz/A) were applied on June 9. Select (16 oz/A) and crop oil (32 oz/A) were applied on June 25 for grass control. Disease pressure was very low throughout the season. Fungicide applications included:

Chlorothalonil (24 oz/A) – June 24 on PD1, July 2 on PD2, August 1 on PD1 and PD2

Provost (10.7 oz/A) – August 14 on PD1 and PD2

Planting date 1 was dug on October 15 and harvested on October 22. Planting date 2 was dug on October 22 and harvested on October 31. Harvest stand counts were taken after digging and prior to harvest for each planting date. Plots were harvested with a KMC two-row combine with bagging attachment and bags were weighed to calculate yield.

Table 5. Analysis of variance for cultivar, planting date, row pattern, and their interactions effect on yield, Poplarville, 2014.

Effect	Degrees of Freedom	Pr > F
Cultivar (CV)	1	0.4039
Planting Date (PD)	1	0.5761
CV x PD	1	0.2346
Row Pattern (RP)	1	0.8412
CV x RP	1	0.3066
PD x RP	1	0.1431
CV x PD x RP	1	0.6794

Table 6. Peanut yield response as effected by planting date, Poplarville, 2014.

Planting Date	Yield (lb/acre)
May 7	5068
May 20	4965

Table 7. Peanut yield response as effected by cultivar, Poplarville, 2014.

Cultivar	Yield (lb/acre)
Georgia-06G	5094
Georgia-09B	4939

Table 8. Peanut yield response as effected by row pattern, Poplarville, 2014.

Row Pattern	Yield (lb/acre)
Twin Row	5035
Single Row	4998

Pod yield was unaffected by cultivar, planting date, row pattern, or any of their interactions.

Research is continuing on this project in the 2015 season. Four planting dates were completed at each of the two locations.