

2007 Soybean Promotion Board Research Project Update

Title: Determining the feasibility of twin-rows in an irrigated soybean production system

Investigator: Dr. Daniel Stephenson

- Three soybean maturity groups:
 - MG III – Pioneer 93M90 (3.9)
 - MG IV – Pioneer 94B73 (4.7)
 - MG V – Pioneer 95M50 (5.5)
- Two seeding patterns:
 - Twin-row – 2 rows spaced 7.5-inches apart with each set separated by 38-inches
 - Single-row – 38-inch
- Five seeding rates:
 - 80,000 seeds/acre
 - 100,000 seeds/acre
 - 120,000 seeds/acre
 - 140,000 seeds/acre
 - 160,000 seeds/acre
- Planted on May 21st. Did not achieve acceptable stand. Replanted on May 29th.
- Harvest dates:
 - Soybean variety 3.9: September 19th
 - Soybean variety 4.7: October 2nd
 - Soybean variety 5.5: October 8th
- Sprinkler irrigated all soybean 14 times for a total of 13.25-inches of water.
- Dates of soybean growth stages R1 and R6.
 - R1 growth stage: 3.9 = July 12th; 4.7 = July 22nd; and 5.5 = July 26th
 - R6 growth stage: 3.9 = August 11th; 4.7 = August 16th; and 5.5 = August 20th
- Soybean plant heights
 - July 17th
 - Soybean varieties 3.9, 4.7, and 5.5 were 22-, 17-, and 16-inches tall, respectively
 - No difference between single- and twin-row seeding patterns
 - Height increased with increasing seeding rate (20- to 23-inch range)
 - At harvest
 - Soybean varieties 3.9, 4.7, and 5.5 were 36-, 37-, and 39-inches tall, respectively
 - No difference between single- and twin-row seeding patterns
 - Height increased with increasing seeding rate (36- to 38-inch range)
- Soybean pod number per plant
 - Soybean varieties 3.9, 4.7, and 5.5 were documented with 59-, 77-, and 75 pods per plant, respectively
 - Single-row and twin-row seeding were documented with 81 and 60 pods per plant, respectively
 - Pod number decreased with increasing seeding rate (55- to 89-pod range)
- Soybean yield (Presented as bushels/acre at 13% moisture)
 - Soybean variety by seeding pattern interaction shown in Table 1.

Table 1. Soybean variety by seeding pattern interaction.			
	3.9	4.7	5.5
	----- Bushels/acre -----		
Single-row	57 c	54 d	66 a
Twin-row	64 a	60 b	64 a

- Yield was not influenced by seeding rate (60 to 63 bushels/acre range)