

2015 One Page Summary on the Investigation of Irrigation Scheduling Methods for Peanuts in Georgia under Conventional and Conservation Tillage

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Methods: Irrigation Scheduling

Two irrigation scheduling trials were implemented at Stripling Irrigation Research Park (SIRP) during the 2015 production season. One trial was strictly comparing irrigation scheduling methods which included seven different irrigation scheduling methods: UGA SSA, SmartCrop utilizing a Crop Water Stress Index (CWSI), UGA Checkbook, UGA EasyPan, UF PeanutFarm, IrrigatorPro, 50% UGA Checkbook, and dryland. Each of these methods can be employed by producers in Georgia and are relatively easy to use to determine irrigation requirements. In the other trial tillage methods and irrigation scheduling were also compared. Both conventional and strip tillage methods were used in combination with UGA SSA, UF PeanutFarm, UGA Checkbook, UGA EasyPan.

Irrigation Scheduling Results

During 2015 22.65 inches of rainfall was received on both research trials, they were both planted on May 18, dug on October 5 and harvested on October 12. Table 1 shows the irrigation scheduling treatment mean plot results (all variety yields were averaged by irrigation scheduling treatment).

Table 1. Mean Irrigation Scheduling Results 2015.

Irrigation Scheduling Treatment Differences			
Irrigation Treatment	Irrigation Amount (in.)	Total Water (in.)	Yield (lbs/ac)
Dryland	0.5	23.30	5193.6
UGA SSA	4.45	27.25	5478.6
SmartCrop CWSI	3.55	26.35	5172.8
UGA Checkbook	12.50	35.30	5313.4
UGA EasyPan	5.20	28.00	5404.9
UF PeanutFarm	5.20	28.00	5327.3
IrrigatorPro	2.80	25.60	5542.6
50% Checkbook	6.76	29.56	5176.1

Table 1 shows there were no major differences between irrigation scheduling treatment during 2015, during a wet year. IrrigatorPro was the highest yielding trial with the UGA SSA second. It should be noted that the version of IrrigatorPro used for this trial incorporated Watermark soil moisture sensors thus operated similar to the UGA SSA treatment. It should be noted that even though the UGA Checkbook method yielded very well during 2015, it also applied three to four times more irrigation other irrigation scheduling treatments. The yield differences between tillage methods of the two trials was not significant when only evaluating tillage method, the conservation or strip-tillage treatment had 7.14 inches of irrigation applied on average across treatments and yielded 4737.3 lbs/ac, while the conventional tillage treatment had 6.95 inches of irrigation applied on average across treatments and yielded 4804.4 lbs/ac. The conservation tillage plots have been in a strip tillage treatment for multiple years, thus there should be not residual treatment effect. This shows that there is little to no agronomic benefit to planting in a conventional tillage scenario. As in the other trial the UGA Checkbook greatly over applied irrigation.

Table 2. Conventional versus strip tillage irrigation treatment differences.

Irrigation Scheduling Differences Conventional vs. Strip Tillage 2015			
Irrigation Treatment	Irrigation Amount (in.)	Total Water (in.)	Yield (lb/ac)
Dryland	0.50	23.15	4800.3
UGA SSA-Strip	5.00	27.65	4639.1
UGA SSA-Con.	4.25	26.90	4721.2
PeanutFarm-Strip	5.75	28.40	4766.8
PeanutFarm-Con.	5.75	28.40	5069.5
Checkbook-Strip	12.05	34.70	4563.8
Checkbook-Con.	12.05	34.70	4611.6
EasyPan-Strip	5.75	28.40	4916.6
EasyPan-Con.	5.75	28.40	4815.4