Impact of Sprinkler Irrigation Amount and Rotation On Peanut Yield

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ABSTRACT

Irrigated hectares for crop production in Georgia increased from 70,875 ha in 1970 to 587,250 in 2000. The majority of the increase was planted in peanut, corn, and cotton. In 1970, these crops accounted for 40,500 of Georgia's irrigated hectares, and in 2000, these crops totaled 465,750 irrigated hectares. Simultaneously, demand for water resources due to urban expansion and interstate litigation coupled with repeated drought are collectively threatening irrigation water supplies in the southeast U.S. peanut producing regions. A study was conducted during the 2001 to 2003 crop years to quantify the impacts of reduced irrigation amounts and different crop rotation sequences including peanut, corn, and cotton. On average, irrigated peanut pod yield was significantly increased by 906 kg/ha as compared to nonirrigated peanut yield. The affect of crop rotation on peanut yield was also significant. One year out of peanuts, in either corn or cotton, increased irrigated peanut yield an average of 1072 kg/ha over continuous peanut. Two years out of peanuts, in either corn or cotton, increased irrigated peanut yield an average of 2333 kg/ha over continuous peanut. In nonirrigated peanuts, crop rotation sequence had less affect on pod yield than did precipitation during the growing season.

Key Words: Corn, cotton, crop rotation, irrigation, Irrigator Pro.

Irrigated hectares for crop production in Georgia have increased over the last 30 yr from 70,875 ha in 1970 to 587,250 in 2000. The majority of the increase was planted in peanuts (*Arachis hypogaea* L.), corn (*Zea mays* L.), and cotton (*Gossypium hirsutum* L.). In 1970, these crops accounted for 40,500 of Georgia's irrigated hectares, and in 2000, these crops totaled 465,750 irrigated hectares. Changes in weather patterns which have negatively impacted peanut and other crop yields in the Southeast (Alabama, Florida, and Georgia) contributed to the irrigation expansion whereby 49% of Southeast peanut hectares are now irrigated (Anon., 1999). Peanut yields in the Southeast declined 11.5% during the 1980s as compared to the 1974 to 1979 period; and the decline was more drastic during the latter half of the 1980s at 14.6% (Lamb *et al.*, 1993).

The yield decline of peanut was attributable to changes in weather patterns during the growing season. July rainfall in the early and latter 1980s (1985 to 1989) was 2.4 cm and 2.9 cm less, and August rainfall was 0.31 cm and 1.61 cm less than rainfall during the 1974 to 1979 period. The average maximum ambient temperatures in the early and latter 1980s were 0.93 C and 1.08 C higher in July and 0.59 C and 0.99 C higher in August, respectively (Lamb *et al.*, 1993). They concluded that changes in weather patterns had significant impact on the observed yield declines and that proper management of irrigation resources could increase peanut yield even in years of adverse weather conditions.

A 4-yr study in Virginia concluded that nonirrigated peanut yields were increased in only 1 out of 4 yr by sprinkler irrigation (Wright *et al.*, 1986). The increase occurred during the 1980 drought when irrigated peanut yields were doubled compared to nonirrigated yields, while irrigated peanut yields were 8 to 29% less than nonirrigated yields in the other 3 yr of the study. The negative results were primarily attributed to increased incidence of pod rot and Sclerotinia blight (*Sclerotinia minor* Jagger) in the irrigated fields and the authors noted the need for additional irrigation research in the Virginia/North Carolina region (Wright *et al.*, 1986).

An 8-yr study in the southeastern peanut producing region concluded that irrigated peanut yields were significantly higher than nonirrigated yields in 5 of 8 yr (Lamb *et al.*, 1997). Mean pod yield, grade, and seed germination were significantly increased and aflatoxin (parts per billion in oil stock) was significantly decreased in the irrigated fields. While yield and quality were improved, economic returns were related to peanut price. Returns over total cost to irrigated production based on the quota support price, weighted average price, and contract additional price were positive in 6 yr, 4 yr, and only 1 yr of the 8-yr study period, respectively (Lamb *et al.*, 1997). The impact of market price on peanut profitability was illustrated in a North Carolina study when peanuts valued at the contract additional (export) price had negative returns because the revenue generated at the lower price was less than production costs (Jordan *et al.*, 2004). The objective of research in the current study was to determine the response of peanut yield to four sprinkler irrigation amounts applied in five different crop rotation sequences.

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Materials and Methods

Experiments were conducted during the 2001 to 2003 crop years at the USDA-ARS Multi-crop Irrigation Res. Farm in Shellman, GA. The soil type is a Greenville fine sandy loam (fine, kaolinitic, thermic Rhodic Kandiudults) with 0 to 2% slope. Conventional tillage practices were followed. Prior crops on the location consisted of nonirrigated corn (1998), wheat (*Triticum aestivum* L.)/grain sorghum (*Sorghum bicolor* L.) (1999), and soybeans (*Glycine max* L.) (2000). Conventional tillage practices consisting of disking (twice), subsoiling (once), moldboard plowing (once), field cultivating (once), rototilling to establish seed beds and planting were followed with all treatments. Disease control in peanut included foliar sprays of chlorothalonil for the first two applications, tebuconazole for the next four applications, and chlorothalonil on the final application.

Each plot consisted of 18 rows established on 0.91 m spacing. Corn and cotton were planted in single rows using a vacuum-type planter (Monosem planter, ATI, Inc., Lenexa, KS) while peanuts were planted in twin rows 0.18 m apart on a 0.91 m bed spacing using a vacuum-type twin row planter (Monosem planter, ATI, Inc., Lenexa, KS). The corn cultivar was Dekalb 686 planted at 6.5 seeds/m, the cotton cultivar was Deltapine DP 458 BG/RR planted at approximately 10.5 seeds/m, and the peanut cultivar was Georgia Green planted at 23 seeds/m. Planting dates in each of the crop years for corn, cotton, and peanuts are shown in Table 1.

A randomized block design was used to compare sprinkler irrigation applied at three different amounts of water with a nonirrigated control. A specially designed three span linear-move sprinkler irrigation system with fixed pad Senninger LND sprinklers (Senninger Irrigation, Inc., Orlando, FL) was installed and specific pressure regulation and nozzle placement provide irrigation amounts of 100, 66, and 33% under the respective spans, with the 100% being derived from the Irrigator Pro expert system (Davidson *et al.*, 1990, 1991, 1998; Lamb *et al.*, 1993). Peanut irrigation scheduling (timing and amount) also was managed by the Irrigator Pro expert system based on the 100% treatment. Irrigation scheduling for corn and cotton was managed based on the recommended water curves and application amounts schedules in the Univ. of Georgia crop production guides for cotton and corn (Anon., 1990, 2001). Five rotation sequences including peanut, cotton, and corn were studied (Table 2).

Yield was measured on 30 m long rows consisting of the two middle rows within the 18-row plot. Digging date was determined base on the hull scrape maturity test (Williams and Drexler, 1981). Peanuts were dug using a standard two-row peanut inverter (Kelly Manufacturing Co., Inc., Tifton, GA), allowed to windrow dry for approximately 3 d, and harvested using a two row peanut combine (Amadus Industries, Inc., Suffolk, VA).

Table 1. Planting dates for crops grown during 3 yr of irrigation experiments.

Crop	2001	2002	2003
Corn	13 April	25 March	22 March
Cotton	25 May	10 May	9 May
Peanut	24 May	9 May	6 May

Table 2. Rotation sequences evaluated for peanut, corn, and cotton.

Rotation	Identifier	2001	2002	2003
Continuous peanut	(PPP)	Peanut	Peanut	Peanut
Cotton, peanut, cotton	(CPC)	Cotton	Peanut	Cotton
Corn, peanut, corn	(MPM)	Corn	Peanut	Corn
Cotton, corn, peanut	(CMP)	Cotton	Corn	Peanut
Cotton, cotton, peanut	(CCP)	Cotton	Cotton	Peanut

Samples were cured to less than 10.5% kernel moisture content and net pod weight was determined by following standard procedures for deducting foreign material and excess moisture.

Immediately following peanut harvest, data on harvest losses was obtained. A 0.6 × 1.8 m area was measured across the windrow in each plot and the unharvested pods were removed from the soil, counted, and weighed. Harvest losses included both diseased and nondiseased pods lost during the digging process to segregate losses caused by disease from mechanical losses. Percent harvest losses were calculated as the net weight of unharvested pods divided by total attainable yield (harvest loss plus actual yield). Data for pod yield and harvest losses were subjected to analysis of variance and LSD procedures ($P = 0.05$).

Results and Discussion

Precipitation and irrigation applied during the 2001 to 2003 growing seasons for peanut, corn, and cotton is provided in Table 3. The regional 20-yr average precipitation during the growing season is approximately 566 mm per year (GASS, 2004). Precipitation on peanut during the 2001 to 2003 growing seasons totaled 528, 439, and 706 mm, respectively, indicating that the 2001 precipitation was near normal with respect to the average precipitation, while 2002 received substantially less rainfall, and 2003 received higher rainfall amounts during the growing season. Total irrigation amount applied each year for peanut, corn, and cotton is also presented in Table 3. Irrigation amounts were approximately the same in 2001 and 2002 at 183 and 188 mm/ha, respectively, while in 2003, the amount of irrigation applied was 89 mm/ha.

Analysis of the data over the 2001 to 2003 crop years indicated differences in pod yield with rotation sequences for different amounts of irrigation as well as within irrigation amount for comparable rotation sequences. Thus, the data are summarized and discussed specific to a) pod

Table 3. Rainfall and irrigation amounts for peanut, corn, and cotton during the 2001 to 2003 crop years at the USDA/ARS Multi-crop Irrigation Research Farm, GA.

Crop	Peanut		Corn		Cotton	
year	Rainfall	Irrigation	Rainfall	Irrigation	Rainfall	Irrigation
	mm					
2001	528	183	404	289	546	256
2002	439	188	338	378	442	282
2003	706	89	599	191	708	114

yield resulting from different amounts of irrigation applied within a rotation sequence, and b) pod yield resulting from a specified irrigation amount compared across different crop rotation sequences.

In the continuous peanut rotation (PPP), peanut pod yield was not related to irrigation amounts (Table 4). In Year 1, the pod yield differences between the 100% irrigation amount and the 66%, 33%, and nonirrigated treatments were 69, 461, and 1950 kg/ha, respectively. However, analysis of variance indicated that no differences in pod yield resulted among the 100, 66, and 33% irrigation amounts, whereas the nonirrigated peanut yields were significantly less (Table 4).

In Year 2, the PPP rotation provided similar yield trends with respect to irrigation amount (Table 4). The yield differences between the 100% and the 66%, 33%, and nonirrigated were 145, 160, and 865 kg/ha, respectively. However, the pod yield differences were not significantly different between the 100, 66, and 33% irrigation amounts. The pod yield in the 100% treatment was higher that the nonirrigated yield while no significant differences resulted between the 66%, 33%, and nonirrigated pod yields.

In Year 3, pod yield in the PPP rotation did not follow the yield trends observed in the previous years (Table 4). The nonirrigated treatment produced the highest pod yield. The pod yields in the 100, 66, and 33% irrigation amounts were 911, 513, and 657 kg/ha less than the nonirrigated treatment. The pod yield differences were not different between the 100, 66, and 33% irrigation amounts and no differences resulted between the 66%, 33%, and nonirrigated pod yields. However, the pod yield in the 100% treatment was significantly lower than the nonirrigated yield primarily due to consistent rainfall during the growing season.

Irrigated peanut yield was affected by rotation sequence in the PPP rotation. Within the 100% irrigation amount, Year 2 and Year 3 pod yields were both less than Year 1 with 1083 kg/ha and 1758 kg/ha reductions, respectively (Table 4). The same statistical relationships resulted in the 66 and 33% irrigation amounts. Year 2 and Year 3 pod yields in the 66% irrigation amount were 1159 kg/ha and 1291 kg/ha lower compared to Year 1 pod yields, respectively. Pod yield was also less in the 33% irrigation amount in Year 2 and Year 3 by 782 kg/ha and 1042 kg/ha, respectively (Table 4).

Conversely, in the nonirrigated treatment, significant differences in pod yield were not observed between Year 1 and Year 2, but pod yield in Year 3 was significantly higher than either Year 1 and Year 2. This result suggests that water was a limiting factor for yield during Years 1 and 2 (Table 4). Further, the trend of reductions in peanut yield in the nonirrigated and irrigated treatments indicated that over time in continuous peanut rotations, pod yield decrease is positively related to irrigation amount. This result indicates that more conservative irrigation management could be recommended in continuous peanut rotations. However, additional data is needed to verify this conclusion.

The pod harvest losses, calculated as a percentage of the attainable yield, support the resulting pod yield differences from the PPP rotation sequence (Table 5). Harvest losses consistently increased in Year 2 and Year 3 of the PPP rotation sequence. In the 100% irrigation treatment, percent harvest losses were not significantly different in Years 1 and 2 at 8.34 and 10.51, respectively. However, in Year 3 the harvest loss of 16.50% was higher

Table 4. Peanut yield in the continuous peanut rotation (PPP) for four irrigation amounts.[a]

Irrigation amount[b]	Year 1	Year 2	Year 3	Average
	kg/ha			
100%	5159 a A	4076 a B	3401 b B	4243
66%	5090 a A	3931 ab B	3799 ab B	4273
33%	4698 a A	3916 ab B	3656 ab B	4089
Nonirrigated	3209 b B	3211 b B	4312 a A	3577

[a]Means followed by the same lower-case letter are not significantly different (P = 0.05) within columns and means followed by the same upper-case letter are not significantly different (P = 0.05) within rows.

[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

Table 5. Percent pod harvest loss in the continuous peanut rotation (PPP) for four irrigation amounts.[a]

Irrigation amount[b]	Year 1	Year 2	Year 3
	%		
100%	8.34 a A	10.51 a A	16.50 a B
66%	6.68 ab A	10.34 a B	11.79 b B
33%	4.68 bc A	9.31 a B	9.99 bc B
Nonirrigated	2.39 c A	3.44 b A	7.80 c B

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[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

than both Years 1 and 2 in the 100% irrigation treatment (Table 5). Similar trends in percent harvest loss also was observed for the 66%, 33%, and nonirrigated treatments when comparing Years 1, 2, and 3 in the PPP rotation sequence (Table 5).

Irrigation amount within year had a direct, significant effect on percent harvest loss. In Year 1 the harvest losses in the 100% irrigated treatment was higher than the 33% and nonirrigated treatments. No significant differences occurred between the 33% and nonirrigated (Table 5). In Year 2, no significant differences in percent harvest loss resulted between the irrigation amounts, while all of the irrigated harvest losses were higher than the nonirrigated losses. In Year 3, the harvest losses in the 100% irrigation treatment were significantly higher than the losses in the 66%, 33%, and nonirrigated treatments.

The breakdown of the percent harvest losses between mechanical and disease losses provides insight into the losses with respect to rotation sequence (data not shown). In Year 1 and Year 2, the mechanical and disease losses were approximately equal and comprised the total harvest losses across all irrigation amounts. However, in Year 3 a significant shift occurred in the breakdown between mechanical and disease losses. In the 100% irrigation treatment in Year 3 of the PPP rotation sequence, 14% of the total harvest losses were mechanical and 86% of total harvest losses were due to diseased pods. Similar results were found in the 66%, 33%, and nonirrigated treatments in Year 3 of the PPP rotation sequence where consistently over 80% of the harvest losses were from diseased pods (data not shown).

In Year 2, peanut pod yields resulting from the PPP, MPM (corn, peanut corn), and CPC (cotton, peanut, cotton) rotations were compared (Table 6). Year 2 in the PPP rotation has been previously discussed. Within the MPM rotation sequence, pod yield differences between the 100% and the 66%, 33%, and nonirrigated treatments were 57, 376, and 1615 kg/ha, respectively. No significant differences resulted between the irrigation amounts and all of the irrigated means were higher than the nonirrigated pod yield mean (Table 6). Within the CPC rotation sequence, pod yield differences between the 100% and the 66%, 33%, and nonirrigated treatments were 131, 438, and 1463 kg/ha, respectively. No significant differences resulted between the irrigation amounts and all of the irrigated means were significantly higher than the nonirrigated pod yield mean (Table 6).

These results support the importance of rotation on irrigated peanut yield. Pod yield was significantly increased by 1208 and 935 kg/ha from 1 yr of corn and cotton preceding peanuts as compared to peanut preceded by peanut in the 100% irrigation amounts (Table 6). Similar differences also resulted between these rotation sequences in the other irrigation amounts as pod yields were 1296 and 949 kg/ha higher in the 66% irrigation amount and 992 and 657 kg/ha higher in the 33% irrigation amount, respectively (Table 6). However, no significant pod yield differences resulted in the nonirrigated treatment between the PPP, MPM, and CPC rotation sequences (Table 6). These results are consistent with previous research showing a 19% increase in peanut yield following a 1-yr cotton rotation compared to continuous peanuts (Rodriguez-Kabana *et al.*, 1991). Although the pod yields were not significantly different between the MPM and CPC rotations, corn preceding cotton in the 100%, 66%, 33%, and nonirrigated treatments provided consistent increases in peanut yield (Table 6). This indicates that in 1 yr irrigated rotation sequences, corn is a better rotation crop in terms of peanut yield. However, further data is required to verify this conclusion.

The harvest losses in Year 2 between the PPP, MPM, and CPC rotations are provided in Table 7. Within the MPM rotation sequence, the harvest losses in the 100% and 66% amounts were higher than both the 33% and the nonirrigated losses. The 33% harvest losses were higher than the nonirrigated in the MPM rotation

Table 6. Peanut yield during Year 2 in the continuous peanut rotation (PPP); corn, peanut, corn rotation (MPM); and cotton, peanut, cotton rotation (CPC) for four irrigation amounts.[a]

Irrigation amount[b]	PPP	MPM	CPC
	kg/ha		
100%	4076 a A	5284 a B	5011 a B
66%	3931 ab A	5227 a B	4880 a B
33%	3916 ab A	4908 a B	4573 a AB
Nonirrigated	3211 b A	3669 b A	3548 b A

[a]Means followed by the same lower-case letter are not significantly different (P = 0.05) within columns and means followed by the same upper-case letter are not significantly different (P = 0.05) within rows.

[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

Table 7. Percent pod harvest loss during Year 2 in the continuous peanut rotation (PPP); corn, peanut, corn rotation (MPM); and cotton, peanut, cotton rotation (CPC) for four irrigation amounts.[a]

Irrigation amount[b]	PPP	MPM	CPC
	%		
100%	10.51 a A	10.21 a A	8.78 a A
66%	10.34 a A	10.05 a A	8.05 a B
33%	9.31 a A	7.48 b A	7.40 a B
Nonirrigated	3.44 b A	3.79 c A	3.96 b A

[a]Means followed by the same lower-case letter are not significantly different (P = 0.05) within columns and means followed by the same upper-case letter are not significantly different (P = 0.05) within rows.

[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

(Table 7). In the CPC rotation, no significant differences in percent harvest losses resulted between the 100, 66, and 33% irrigation amounts and each of the irrigation treatments was higher than the nonirrigated (Table 7). In Year 2, no differences resulted between mechanical and disease losses that comprised total harvest losses in the PPP, MPM, and CPC rotation sequences or between the irrigation amounts (data not shown).

In Year 3, peanut pod yields resulting from the PPP, CMP, and CCP rotations can be compared (Table 8). The CMP data represents peanut pod yield following cotton in 2001 and corn in 2002 prior to peanut in 2003 and the CCP represents 2 yr of cotton preceding peanut in the same years. Year 3 in the PPP rotation has been previously discussed. In the CMP rotation sequence, no significant differences in pod yields were observed in the 100, 66, and 33% irrigation amounts, but all were higher than the nonirrigated pod yield. In the CCP rotation sequence, the 66% pod yield was significantly higher than the nonirrigated pod yield (Table 8). The lack of response to irrigation in Year 3 is attributable to consistent and abundant precipitation during the production season. Year 3 data further supports the importance of rotation on irrigated peanut yield. Pod yield was increased by 2250 and 2416 kg/ha from the CMP and CCP rotation sequences as compared to peanut preceded by peanut in the 100% irrigation amounts. Similar differences also resulted between these rotation sequences in the other irrigation amounts as pod yields were 1797 and 2305 kg/ha higher in the 66% irrigation treatment and 2236 and 2115 kg/ha higher in the 33% irrigation treatment, respectively. Pod yield was also higher in the nonirrigated treatment for the CMP and CCP rotation sequences compared to the PPP rotation sequence by 743 and 749 kg/ha, respectively (Table 8). Previous studies also found increases in peanut yield ranging from 28 to 44% resulting from 2 yr out of peanut compared to continuous peanut (Hewitt *et al.*, 1980; Rodriguez-Kabana *et al.*, 1991; Baldwin, 1992; Lamb *et al.*, 1993; Johnson *et al.*, 1999).

In Year 3, the harvest losses in the PPP rotation sequence were significantly higher than the losses in the CMP and CCP rotation sequence for the 100, 66, and 33% irrigation amounts (Table 9). No difference in harvest losses resulted between the PPP, CMP, and CCP rotation sequences in the nonirrigated treatment. No differences in harvest losses resulted between the different irrigation amounts (including nonirrigated) in the CMP and CCP rotation sequences (Table 9). As previously mentioned, more than 80% of the harvest losses resulting in Year 3 of the PPP rotation sequence were from diseased pods and 20% were attributable to mechanical loss. In the CMP and CCP rotation sequences, no difference resulted between the diseased and mechanical losses.

Farmer stock grade [Sound Mature Kernels plus Sound Splits (SMKSS)] was not affected by irrigation amount and/or rotation sequence (data not shown). Previous research indicated a positive relationship between irrigation amount and SMKSS (Lamb *et al.*, 1997). However, analysis of this data did not support their results. SMKSS in the continuous peanut rotation showed no trends within irrigation amounts across years or within a year across irrigation amounts. Analysis of the SMKSS resulting in the other rotation sequences and irrigation amounts also showed no significant differences (data not shown).

Summary and Conclusions

The data indicate the importance of peanut irrigation and proper crop rotation on peanut production. Increases in peanut yield were positively related to increases in irrigation amount except in the continuous peanut rotation sequence. In Year 3 of the continuous peanut rotation, peanut yield was inversely related to irrigation amount, indicating that excess water and disease were the limiting

Table 8. Peanut yield during Year 3 in the continuous peanut rotation (PPP); cotton, corn, peanut rotation (CMP); and cotton, cotton, peanut rotation (CCP) for four irrigation amounts.[a]

Irrigation amount[b]	PPP	CMP	CCP
	kg/ha		
100%	3401 a A	5651 a B	5817 ab B
66%	3799 ab A	5596 a B	6104 a B
33%	3656 b A	5892 a B	5771 ab B
Nonirrigated	4312 b A	5055 b B	5061 b B

[a]Means followed by the same lower-case letter are not significantly different (P = 0.05) within columns and means followed by the same upper-case letter are not significantly different (P = 0.05) within rows.

[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

Table 9. Percent pod harvest loss during Year 3 in the continuous peanut rotation (PPP); cotton, corn, peanut rotation (CMP); and cotton, cotton, peanut rotation (CCP) for four irrigation amounts.[a]

Irrigation amount[b]	PPP	CMP	CCP
	%		
100%	16.50 a A	7.99 a B	8.06 a B
66%	11.79 b A	6.78 a B	6.49 a B
33%	9.99 bc A	5.87 a B	5.94 a B
Nonirrigated	7.80 c A	6.61 a A	7.12 a A

[a]Means followed by the same lower-case letter are not significantly different (P = 0.05) within columns and means followed by the same upper-case letter are not significantly different (P = 0.05) within rows.

[b]100% irrigation recommendations are derived from the Irrigator Pro for Peanuts irrigation scheduling expert system.

factors. Decreased yields were due to the higher mechanical and disease losses that occurred during harvest than during previous years.

Irrigated peanut yield was increased by crop rotation sequence. One year out of peanut in either corn or cotton increased irrigated peanut yield while numeric, but not significant yield increases resulted in the nonirrigated peanut yield. Two years out of peanut in either a cotton/corn or cotton/cotton rotation provided increases in both irrigated and nonirrigated peanut yield. On average, the rotation benefit of 2 yr out of peanuts provided a 2333 kg/ha yield increase while 1 yr out of peanut provided a 1072 kg/ha yield increase.

Further research is needed to determine cropping systems profitability and not just productivity. Changes in the Farm Security and Rural Investment Act of 2002 replaced the long-standing supply management (quota) program for peanuts with a commodity loan program for peanuts similar to corn, cotton, and other crops. Farm managers must address cropping systems in terms of economic profitability and sustainability consistent with current farm policy.

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