PRODUCTION INPUT EXPERIMENTS, 2003

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Cash prices to U.S. cotton growers have been below the cost of production for several years until a recent surge in price in late 2003 due to demand from China. Prospects of low prices and countless other factors create tremendous impetus for lowering input costs. To address this issue, the UGA Extension Cotton Team conceived the idea of establishing management studies comparing systems with varying input levels.

The Team collaborated to outline a basic production system, which was labeled "UGA," and then systems with slightly reduced inputs ("UGA minus") and slightly higher inputs ("UGA plus"). Conceptually, the reduced system was an attempt to "cut corners" without reducing yield; in other words, it was a system with a few less inputs but with reasonable expectation of normal yield; while the plus system included a modest few extra inputs that might provide opportunity for slightly higher yield.

Comparisons were conducted at two sites, an irrigated quadrant at the RDC Pivot in Tifton and one dryland field nearby at the "Water Tower Field." Both were grown in conservation strip tillage production with a small grain cover crop. Plot size was six rows by 40 feet, and there were three replications.

General production practices and those that varied by system are listed in Tables 1 and 2. Pest control was acceptable in all treatments. Yields were slightly higher at the non-irrigated site (Water Tower) as compared to the irrigated site (RDC Pivot). There were no statistical differences in cotton yields among the treatments within location.

Table 1. Production input experiment, RDC Pivot, irrigated site, 2003.

General treatments
Burndown herbicides: Apr 3 - 2,4-D 0.5 pt + Touchdown IQ 1 qt
Strip tillage: Apr 30
Planted: May 2 - DP 555 BG/RR
Early season insecticide (target pest): May 13 - Decis 1.4 oz (cutworms)
Sidedress fertilization: Jun 2 - 23 gal 28-0-0-5
In-season insecticides (target pest):Jul 31-Karate 1.92 oz (stink bugs); Aug 23-Bidrin 6 oz (stink bugs)
Plant growth regulator (mepiquat chloride): Jul 7 - 16 oz
Irrigation: total 2.4 inches in 3 events
Harvested: Sep 23

Treatment Variables

Systems	Management / input variations	Lint yld, lb/A*
UGA minus	May 2 - 10 gal 10-34-0 starter (dribbled) May 2 - 4 oz Orthene 75 seed treatment May 13 - Roundup WMax 13 oz + Orthene 97 3 oz (OT 1-2 leaf) Jun 8 - Roundup WMax 21 oz (post dir) Jun 11 - Pix Ultra 6 oz Jun 13 - B 0.25 (foliar) Sep 10 - DEF 1.25 pt	1041
UGA	May 2 - 500 lb 5-10-15 + 42 lb 0-0-60 May 2 - 5.5 gal 28-0-0-5 starter (dribbled) May 2 - Temik 3.5 lb in-furrow May 2 - Prowl 2 pt PRE May 21 - Roundup WMax 21 oz (OT 4 leaf) Jun 11 - Pix Ultra 12 oz Jun 13 - B 0.5 (foliar) Jun 15 - Roundup WMax 21 oz + Direx 21 oz (post dir) Jul 25 - 10 lb 46-0-0 (foliar) Sep 10 - Finish 1.33 pt + Ginstar 5.33 oz	1138
UGA plus	May 2 - 500 lb 5-10-15 + 110 lb 18-46-0 + 84 lb 0-0-60 May 2 - 5.5 gal 28-0-0-5 starter (dribbled) May 2 - Temik 5 lb in-furrow May 2 - Prowl 2 pt PRE May 5 - 0.5 ton lime May 21 - Roundup WMax 21 oz + Dual Magnum 1 pt (4 leaf) Jun 11 - Pix Ultra 12 oz Jun 13 - B 0.5 (foliar) Jun 15 - Roundup WMax 21 oz + Direx 21 oz (post dir) Jun 18 - 70 lb 0-0-60 (sidedress) Jul 25 - 1 gal Coron (10-0-10 + 0.5% B) (foliar) Sep 10 - Finish 1.33 pt + Ginstar+ 5.33 oz	1141
	LSD (0.10)	154

* Assumes 42 percent lint turnout

Table 2. Production input experiment, Water Tower Field, nonirrigated site, 2003.

General treatments
Burndown herbicides: Apr 3 - 2,4-D 0.5 pt + Touchdown IQ 1 qt
Strip tillage: Apr 30
Planted: May 5 - DP 555 BG/RR
In-season insecticides (target pest): Aug 5 - Mustang Max 3.6 oz (stink bugs); Aug 29 - Baythroid 2 oz + Orthene 0.5 lb (stink bugs)
Plant growth regulator (mepiquat chloride): Jul 7 - 12 oz + 0.27 lb B
Harvest aid: Sep 19 - Finish 1.33 pt + Ginstar 5.33 oz
Harvested: Oct 1

Treatment Variables

Systems	Management / input variations	Lint yld, lb/A*
UGA minus	May 5 - 10 gal 10-34-0 starter (dribbled) May 5 - 4 oz Orthene 75 seed treatment May 16 - Roundup WMax 13 oz + Orthene 97 3 oz (OT 1-2 leaf) Jun 6 - 118 lb 34-0-0 + 50 lb 0-0-60 Jun 13 - B 0.25 (foliar) Jun 15 - Roundup WMax 21 oz (post dir)	1351
UGA	May 5 - 0.5 ton lime May 5 - 5.5 gal 28-0-0-5 starter (dribbled) May 5 - Temik 3.5 lb in-furrow May 6 - Prowl 2 pt PRE May 6 - 65 lb 18-46-0 + 34 lb 34-0-0 + 100 lb 0-0-60 May 21 - Roundup WMax 16 oz (OT 4 leaf) Jun 6 - 97 lb 34-0-0 (sidedress) Jun 13 - B 0.5 (foliar) Jun 15 - Roundup WMax 21 oz + Direx 21 oz (post dir) Jun 16 - Pix Ultra 6 oz Jul 25 - 10 lb 46-0-0 (foliar) + Pix Plus 1 pt	1462
UGA plus	May 5 - 1.0 ton lime May 5 - 5.5 gal 28-0-0-5 starter (dribbled) May 5 - Temik 5 lb in-furrow May 6 - Prowl 2 pt PRE May 6 - 500 lb 5-10-15 + 22 lb 18-46-0 + 42 lb 0-0-60 May 21 - Roundup WMax 16 oz + Dual Magnum 1 pt (4 leaf) Jun 6 160 lb 34-0-0 (sidedress) Jun 13 - B 0.5 (foliar) Jun 15 - Roundup WMax 21 oz + Direx 21 oz (post dir) Jun 16 - Pix Ultra 6 oz Jun 18 - 70 lb 0-0-60 (sidedress) Jul 25 - 1 gal Coron (10-0-10 + 0.5% B) (foliar) + Pix Plus 1 pt	1364
	LSD (0.10)	117

* Assumes 42 percent lint turnout