

**PROJECT SUMMARY, January 2007**  
**(Funded Proposal)**

**Title:** Evaluation of Weed Suppression Provided by a High-Residue Rye Cover in Conservation-Tillage Cotton.

**Investigators:** Andrew Price (Weed Scientist, USDA-ARS), Dale Monks (Cotton Extension Specialist, Auburn University), Mike Patterson (Extension Weed Scientist, Auburn University).

**Progress to date:** A field study established at the Prattville Experiment Station in fall 2005. The study was a factorial treatment arrangement consisting of three levels: winter cover (rye present or absent), early season residual (either Valor in burndown, Prowl at planting, or none), and postemergence herbicide (glyphosate applied at 4-leaf and/or Caparol plus MSMS at layby, or none). Rye was established in half the plots as winter cover preceding a cotton crop managed in a conservation tillage system. In spring 2006, the winter cover and emerged weeds in fallow plots was terminated with a glyphosate application. Additionally, rye was rolled with mechanical roller-crimper. Cotton was then established in four row (38 in. spacing) plots 20 ft in length. Unfortunately, the dry experimental area receive a 1.5 in rainfall immediately after planting that resulted in a heavy surface crust, and the cotton stand was not established (see rainfall report below, column PREC). After replanting, no subsequent rainfall occurred to facilitate germination and the experiment was lost. The experiment is being repeated again this year.

Compiled by AWIS Weather Services, Inc.

Daily Weather Observations for: Prattville\_CR10, AL StationID= PRTA1  
Latitude= 32.43 N Longitude= 86.45 W Elevation= 200 Feet  
Observations for 24 hours ending 7 AM Central Standard time.

DATE	MAX	TMAX	MIN	AVG	DFN	TMIN	AAT	RHX	TRHX	RHN	TRHN	SMX	TSMX	SMN	SAV	TSMN	CHI	WET	PREC	HGU	THGU
05/01/2006	70	1559	53	62	M	525	62	100	2057	58	945	73	1637	69	71	655	0	9	0.40	23	952
05/02/2006	74	1637	54	64	M	340	63	100	458	54	1257	78	1615	69	74	729	0	12	0.00	17	1130
05/03/2006	80	1530	61	71	M	700	69	100	2103	51	1638	81	1617	71	76	703	0	11	0.00	13	1125
05/04/2006	85	1545	60	73	M	413	72	100	515	47	1444	83	1609	74	79	704	0	11	0.00	15	1014
05/05/2006	85	1530	63	74	M	447	74	100	458	39	1451	84	1613	75	80	700	0	7	0.00	15	2258
05/06/2006	77	1544	55	66	M	512	67	100	535	64	1546	81	1624	74	78	624	0	11	0.00	18	1239
05/07/2006	79	1230	63	71	M	700	71	100	506	46	1146	83	1523	74	79	700	0	12	0.15	13	1231
05/08/2006	81	1517	60	71	M	431	69	100	755	62	1547	82	1625	75	79	633	0	12	0.02	14	909
05/09/2006	81	1649	62	72	M	724	70	100	749	54	1650	83	1641	75	79	700	0	0	0.00	16	1339
05/10/2006	78	1426	63	71	M	701	68	100	448	72	1426	81	1553	75	78	643	0	15	0.25	17	2124
05/11/2006	77	1224	62	70	M	1643	66	100	528	77	1157	77	1352	73	75	650	0	13	1.55	25	1009
05/12/2006	73	1453	50	62	M	427	62	98	432	36	2115	80	1551	71	76	623	0	7	0.00	19	907
05/13/2006	73	1528	49	61	M	452	61	100	115	37	201	81	1529	71	76	705	0	10	0.00	21	1249
05/14/2006	74	1627	57	66	M	950	66	100	456	71	109	76	1709	71	74	701	0	4	0.25	14	838
05/15/2006	75	1337	57	66	M	351	66	98	2215	55	1526	77	1426	72	75	657	0	6	0.00	15	1429
05/16/2006	70	1424	47	59	M	500	59	100	510	39	2012	79	1538	70	75	634	0	10	0.00	18	1539
05/17/2006	73	1548	52	63	M	317	62	100	515	40	1240	79	1522	70	75	702	0	6	0.00	13	1330
05/18/2006	74	1354	56	65	M	455	64	99	457	44	1400	79	1447	71	75	701	0	9	0.00	15	1109
05/19/2006	83	1503	55	69	M	405	70	98	414	38	2155	82	1536	72	77	700	0	7	0.00	24	1558
05/20/2006	86	1459	66	76	M	700	76	95	526	31	350	86	1604	73	80	700	0	3	0.00	14	1047
05/21/2006	90	1416	66	78	M	404	77	100	2118	30	2353	88	1542	77	83	700	0	6	0.00	21	1330
05/22/2006	88	1408	60	74	M	347	74	100	407	33	2200	90	1546	79	85	705	0	24	0.00	16	1427
05/23/2006	88	1602	63	76	M	503	75	100	7	38	1608	90	1555	79	85	702	0	24	0.00	13	1007
05/24/2006	91	1438	67	79	M	506	79	97	522	34	1301	91	1517	80	86	701	0	24	0.00	12	1250
05/25/2006	93	1253	65	79	M	500	79	98	218	38	157	91	1346	82	87	617	0	24	0.00	13	1303
05/26/2006	92	1333	70	81	M	505	81	97	520	38	1329	93	1554	82	88	703	0	24	0.00	16	1344
05/27/2006	90	1310	70	80	M	504	79	97	511	44	1435	93	1531	84	89	700	0	24	0.00	19	1123
05/28/2006	92	1519	69	81	M	503	81	98	507	42	1315	95	1629	84	90	704	0	24	0.00	13	1340
05/29/2006	94	1533	69	82	M	500	82	96	520	42	254	95	1630	85	90	701	0	24	0.00	12	1352
05/30/2006	92	1506	69	81	M	446	80	100	203	44	1454	96	1539	86	91	703	0	24	0.00	14	1444
05/31/2006	93	1527	66	80	M	453	80	98	530	37	1329	95	1556	86	91	623	0	24	0.00	14	1206

AIR TEMPERATURES:

Avg Maximum= 82.3 Avg Minimum= 60.6 Average= 71.5  
Highest= 94 Lowest= 47

4in SOIL TEMPERATURES:

Avg Maximum= 84.6 Avg Minimum= 75.8 Average= 80.2  
Highest= 96 Lowest= 69

PRECIPITATION STATISTICS:

Total= 2.62 Greatest Daily= 1.55 Rain Days= 6  
Days with precip greater than or equal to: 0.10= 5 0.25= 4  
Daily precipitation amount of Trce is less than 0.01 inch.

DATE	MAX	TMAX	MIN	AVG	DFN	TMIN	AAT	RHX	TRHX	RHN	TRHN	SMX	TSMX	SMN	SAV	TSMN	CHI	WET	PREC	HGU	THGU
06/01/2006	94	1444	69	82	M	241	81	89	237	36	231	96	1518	86	91	702	0	24	0.00	12	1134
06/02/2006	92	1407	72	82	M	505	81	91	448	38	1358	97	1517	87	92	700	0	24	0.00	15	1222
06/03/2006	90	1201	65	78	M	422	72	100	443	55	1202	92	1310	82	87	621	0	23	0.15	18	1307
06/04/2006	85	1534	59	72	M	444	72	99	700	42	19	91	1531	80	86	626	0	3	0.00	17	1501
06/05/2006	88	1456	62	75	M	501	73	100	459	36	1451	92	1614	81	87	704	0	11	0.20	18	1727
06/06/2006	85	1511	59	72	M	155	73	100	205	35	119	90	1528	79	85	631	0	0	0.00	16	1244
06/07/2006	85	1513	57	71	M	451	71	95	150	27	1331	91	1559	79	85	700	0	2	0.00	13	746
06/08/2006	89	1530	61	75	M	445	74	94	38	29	54	92	1607	80	86	701	0	0	0.00	14	1316
06/09/2006	92	1514	61	77	M	455	79	89	400	33	401	92	1610	82	87	700	0	1	0.00	15	1600
06/10/2006	91	1528	63	77	M	434	78	95	504	29	1613	94	1550	83	89	700	0	1	0.00	16	1312
06/11/2006	95	1513	66	81	M	453	82	100	320	31	250	96	1548	84	90	701	0	0	0.00	11	1349
06/12/2006	95	1524	70	83	M	427	83	98	458	32	1431	97	1558	86	92	701	0	2	0.00	17	1212
06/13/2006	94	1448	70	82	M	429	78	100	2113	37	1503	96	1529	86	91	632	0	11	0.08	24	1522
06/14/2006	84	1553	67	76	M	418	76	98	224	71	220	89	1634	83	86	616	0	1	0.02	14	1712
06/15/2006	91	1428	68	80	M	454	80	91	449	42	1549	94	1512	83	89	706	0	0	0.00	11	1041
06/16/2006	94	1553	71	83	M	2328	82	79	2326	32	126	97	1558	85	91	703	0	0	0.00	12	1450
06/17/2006	96	1432	74	85	M	505	83	92	131	31	1326	98	1524	86	92	700	0	0	0.00	14	1812
06/18/2006	91	1339	68	80	M	412	80	81	255	36	449	97	1538	87	92	629	0	0	0.00	15	1343
06/19/2006	91	1559	68	80	M	422	79	100	354	34	405	97	1600	87	92	700	0	0	0.00	14	1201
06/20/2006	91	1650	69	80	M	420	81	97	439	40	1115	95	1541	88	92	637	0	1	0.00	11	1102
06/21/2006	96	1559	70	83	M	502	84	95	415	35	1558	97	1642	88	93	702	0	1	0.00	9	1150
06/22/2006	99	1420	71	85	M	419	85	91	424	34	1457	101	1552	88	95	706	0	0	0.00	14	1420
06/23/2006	99	1245	70	85	M	431	83	100	434	32	1240	99	1331	89	94	642	0	11	0.06	23	1941
06/24/2006	98	1535	70	84	M	353	81	98	23	35	1601	99	1451	88	94	634	0	10	0.01	16	1729
06/25/2006	94	1611	70	82	M	503	78	100	220	40	1605	96	1335	87	92	625	0	13	0.11	20	1703
06/26/2006	94	1524	69	82	M	510	77	100	407	37	1507	97	1559	86	92	619	0	13	0.14	20	1653
06/27/2006	92	1540	68	80	M	439	79	99	702	37	1425	96	1512	86	91	700	0	3	0.00	14	1929
06/28/2006	91	1450	67	79	M	504	80	100	439	39	459	95	1630	86	91	638	0	0	0.00	11	1145
06/29/2006	92	1415	61	77	M	453	79	95	350	31	146	96	1528	85	91	642	0	0	0.00	15	1259
06/30/2006	95	1444	64	80	M	439	80	91	410	23	130	98	1550	85	92	700	0	0	0.00	16	1401

AIR TEMPERATURES:

Avg Maximum= 92.1 Avg Minimum= 66.6 Average= 79.4  
Highest= 99 Lowest= 57

4in SOIL TEMPERATURES:

Avg Maximum= 95.2 Avg Minimum= 84.7 Average= 90.0  
Highest=101 Lowest= 79

PRECIPITATION STATISTICS:

Total= 0.77 Greatest Daily= 0.20 Rain Days= 8  
Days with precip greater than or equal to: 0.10= 4 0.25= 0  
Daily precipitation amount of Trce is less than 0.01 inch.