

# Cyanazine Combinations Preplant for Broadleaf Weed Control in Cotton.

*Jon P. Chernicky, K. C. Hamilton, Plant Scientists; E. Stan Heathman, Extension Weed Specialist; Ben B. Barstow, Research Assistant, University of Arizona Plant Sciences Dept.*

## METHODS

Two field trials were conducted at Maricopa, Az. in 1986 on a sandy clay loam soil to evaluate preplant combinations of cyanazine for controlling broadleaf weeds in cotton (*Gossypium hirsutum*). Herbicides were applied to plots 13.3 ft wide by 40 ft long. Each treatment was replicated four times in a randomized complete block design. Treatments were applied by a tractor mounted sprayer with an output of 20 gpa was maintained by 47 PSI pressure.

In test C1, herbicides were applied to flat ground (March 8) and disked to a depth of 4 inches (PPI). On March 23, herbicides were applied over-the-top of peaked beds (40 in apart) and shallowly incorporated (2 in.) with a bed mulcher (PH). In both tests, four rates of butylate (0.50, 1.0, 2.0, 3.0 lb/a) were tank-mixed with 0.75 lb/a of pendimethalin, but only the 1.0 lb/a rate was included with trifluralin (0.75 lb/a) and cinmethylin (0.50 lb/a).

Butylate combinations were compared to a pendimethalin/prometryn combination (see table). Parameters measured included: cotton stand per 10 ft of row, May 27), crop injury, percent control of Palmer's amaranth, (*Amaranthus palmeri*), Wright groundcherry (*Physalis wrightii*) and seed cotton yield.

## RESULTS

Of the herbicide combinations applied PPI, only cyanazine/cinmethylin (1.0 lb/a + 0.50 lb/a) and cyanazine/pendimethalin (3.0 lb/a + 0.75 lb/a) reduced cotton stand and caused significant crop injury. Crop injury was most noticeable after the first postemergence irrigation and diminished as the season progressed. All treatments, with the exception of cyanazine/cinmethylin, provided greater than 85% broadleaf weed control, which was reflected in yield of seed cotton.

**Table 1. Response of cotton and broadleaf weeds to cyanazine combinations applied preplant (PPI) and pre-harrow (PH)**

Herbicide	Rate	Cotton stand May 27		1/ Weed control August 12				2/ Crop injury June 13		Seed cotton	
		PPI	PH	PPI		PH		PPI	PH	PPI	PH
		(lb/a)	p/10ft	Pa	GC	Pa	GC			(lb/a)	
				-----%-----							
cyanazine pendimethalin	0.50 0.75	68	57	99	98	93	99	0	0	4930	4300
cyanazine pendimethalin	1.0 0.75	53	61	99	94	85	98	0	0	4790	4220
cyanazine pendimehtalin	2.0 0.75	63	58	99	97	97	99	0	2	4790	4430
cyanazine pendimehtalin	3.0 0.75	40	55	99	99	97	97	1	5	4780	3990
prometryn pendimethalin	1.6 0.75	54	56	99	95	96	99	0	0	4750	4360
cyanazine cinmethylin	1.0 0.50	23	58	40	5	91	92	6	0	3930	4100
cyanazine trifluralin	1.0 0.75	56	57	99	99	97	97	0	1	4770	4440
weedy check	0.0	56	--	--	0	--	0	-	0	----	1980
LSD (p=0.05)		( 7)	( 8)	(14)	( 6)	(12)	(13)	(1)	(1)	(610)	(720)

1/  
Weed Control Pa= Palmer's amaranth (Pigweed)  
GC= Wright groundcherry

2/  
Crop injury, 0=none 10=severe

Herbicides  
cyanazine= Bladex  
pendimethalin= Prowl  
cinmethylin= Cinch, experimental  
trifluralin= Treflan

**Table 2. Response of cotton and broadleaf weeds to cyanazine combinations applied preplant (PPI) and pre-harrow (PH)**

Herbicide	Rate	Cotton stand May 27		1/ Weed control August 12				2/ Crop injury June 13		Seedcotton	
		PPI	PH	PPI		PH		PPI	PH	PPI	PH
				Pa	GC	Pa	GC				
	(lb/a)	p/10ft		-----%-----						(lb/a)	
cyanazine pendimethalin	0.56 0.84	68	57	99	98	93	99	0	0	5520	4820
cyanazine pendimethalin	1.12 0.84	53	61	99	94	85	98	0	0	5360	4730
cyanazine pendimethalin	2.24 0.84	63	58	99	97	97	99	0	2	5360	4960
cyanazine pendimethalin	3.34 0.84	40	55	99	99	97	97	1	5	5350	4470
prometryn pendimethalin	1.80 0.84	54	56	99	95	96	99	0	0	5320	4880
cyanazine cinmethylin	1.12 0.56	23	58	40	5	91	92	6	0	4400	4590
cyanazine trifluralin	1.12 0.84	56	57	99	99	97	97	0	1	5340	4970
weedy check	0.0	56	--	--	0	--	0	-	0	----	2220
LSD (p=0.05)	(7)	(8)	(14)	(6)	(12)	(13)	(1)	(1)	(680)	(810)	

1/  
Weed control 0%= no control 100%= complete control  
Gc= Wright groundcherry  
Pa= Palmer's amaranth

2/  
Crop injury 0=no injury 10=severe injury