



Texas Agricultural Extension Service

The Texas A&M University System

1999 Studies for Guar, Texas South Plains

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The following results are from four 1999 studies that were conducted in cooperation among West Texas Guar Contractor growers and Calvin Trostle, Texas Ag. Extension Service, Lubbock. Each study represents the results of only one year where several years of data are probably necessary to reach a reliable conclusion.

Guar Harvest Method Evaluation

Joel Flowers Farm, Brownfield

Objective: Compare the guar harvest efficiency of three different combine header types.

Method	Yield (lbs./A)	Signifi- cance?*	Losses on ground	Losses on stem	Total Losses	Losses as % of total yield
	----- Lbs./A -----					
Row Crop Header	1323	A	59	97	155	10.5%
Flex Header	1082	B	116	165	281	20.6%
<u>Pickup Attach. (after knifing)</u>	977	B	---	---	---	---

*Numbers followed by the same letter are not statistically significantly different; Yield LSD = 137 lbs./A at Alpha = 0.10.

Summary: The guar crop was very dry thus we expect harvest losses were higher, particularly for the flex header, than if the crop had been cut earlier. We believe the knifed guar may not be a valid comparison due to harvest in a poorer area (was more grassy) next to the other replicated harvested strips.

Fertilizer N Study, Dryland Guar

Buzz Steele Farm, Brownfield

Objective: Determine the possible influence of fertilizer N amount and timing on dryland guar.

Field information: Kinman variety, 4 lbs./A on ~June 17, 1999, after failed cotton (hail). Inoculated with seedbox Nitragin brand *Rhizobium*. Early-season fertilizer for cotton was 120 lbs./A of 10-34-0; mid-season N (28-0-0-5) was knifed in at ~10" deep about 10" to side of row. Soil was very dry when "late" N was applied. Soil profile moisture at planting was excellent; received ~4" of in-season rainfall. Harvested December 2, 1999.

<u>N Treatment</u>	<u>Date Applied</u>	<u>Actual N Rate</u>	<u>Average Yield</u>	<u>Statistical Significance*</u>
		----- Lbs./A -----		
"Early" Low	7/26/99	27	1042	A
"Early" High	7/26/99	44	1038	A
"Late" High	8/4/99	45	1013	A
"Late" Low	8/4/99	22	979	A
Control	---	none	898	A

*Treatments followed by the same letter are not statistically significantly different at Alpha = 0.10.

Summary: The trend in the dryland guar suggests some fertilizer N response was achieved in 1999. Little or no *Rhizobium* nodulation of the guar suggests little N from *Rhizobium* fixation occurred, thus the crop was more likely to respond to limited N. Based on the results under the conditions of this test, it appears that the cost of the mid-season N application was recovered in terms of slightly higher yields. Further testing of guar yield response to N is needed for guar production in the Texas South Plains.

Fertilizer N Study, Irrigated Guar

Buzz Steele Farm, Brownfield

Objective: Determine the possible influence of fertilizer N amount and timing on irrigated guar.

Field information: Kinman variety, 4 lbs./A on ~June 24, 1999, after failed cotton (hail). Inoculated with seedbox Nitragin brand *Rhizobium*. Early-season fertilizer for cotton was 120 lbs./A of 10-34-0; mid-season N (28-0-0-5) was knifed in at ~10" deep about 10" to side of row. Soil profile moisture at planting was very good; received ~4" of in-season rainfall plus two 1-inch irrigations by pivot. Harvested December 2, 1999.

<u>N Treatment</u>	<u>Date Applied</u>	<u>Actual N Rate</u>	<u>Average Yield</u>	<u>Statistical Significance*</u>
		----- Lbs./A -----		
"Early" Low	7/29/99	59	1298	A
Control	---	none	1297	A
"Early" High	7/29/99	104	1277	A
"Late" High	8/9/99	88	1272	A
"Late" Low	8/9/99	54	1238	A

*Treatments followed by the same letter are not statistically significantly different at Alpha = 0.10.

Summary: No response was achieved to the N fertilizer applications. *Rhizobium* nodulation averaged 2 nodules per plant, much less than we might expect, but still more than that observed on other Terry Co. fields. Field may have a higher level of residual fertility than the above dryland site. Further testing of guar yield response to N is needed for guar production in the Texas South Plains.