

EVALUATION OF FM 960 WITH THREE DIFFERENT GENE TRAITS

J. R. Johnson¹ and J. R. Saunders¹

¹North Mississippi Branch Station, North Mississippi Research and Extension Center, Mississippi State University; Holly Springs, MS 38635

ABSTRACT: At times, implanting a transgenic gene into a cotton variety alters its yield performance. In our study we evaluated a popular cotton variety, FM 960, having Bollgard, Bollgard II, and Roundup Ready genes implanted. These are all trademark genes owned by Monsanto Chemical Co. Yields were good at all locations. There was no difference between variety performances within locations. Average yield of varieties at Holly Spring was 2742 lb seed cotton/ac; at Nesbit 3138 lb seed cotton/ac; and at Raymond 3871 lb seed cotton/ac.

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MATERIALS AND METHODS: A popular Fibermax cotton line having a separate transgenic gene implanted resulting in three different varieties (FM 960BR, FM 960R, and FM 960B2R) was evaluated for seed cotton yield, at Holly Springs, Nesbit and Raymond in 2004. Test sites were located on a Grenada silt loam soil at Holly Springs and Raymond, and Collin fine sandy loam at Nesbit. Cultural practices were no-till at Holly Springs, and conventional tillage at Nesbit and Raymond. Experimental design was a randomized complete block with 4 replications. Plot size was two 38-inch rows, 50 ft long.

At Raymond and Nesbit the plot area was hipped in early March and rehipped in early April. Fertilizer (N, P, and K) was broadcast over the plot area according to soil test recommendations in April before the plots were rehipped. At Holly Springs the plot area was sprayed with Roundup (glyphosate) at 1.0 lb ai/ac in late March 2004. Fertilizer (N, P, and K) was broadcast over the plot area according to soil test recommendations in late April Cottonseeds were planted using a plot planter adapted for planting plots. Plots were planted the last week of April for Holly Springs and Nesbit and the first week of May for Raymond at a rate of 4 live seed per ft/ row based on laboratory seed germination test for each variety. Terrachlor Super X 18.8G (pentachlornitrobenzene) 1.5 lb ai/ac + Temik 15G (aldicarb) 0.75lb ai/ac was applied as granules in furrow at planting. Cotoran (fluometuron) 1.0 lb. ai./ac.+ Staple (pyrithiobac) .06 oz ai/ac. were broadcast over the tilled area. Cotoran + Gramoxone (fluometuron + paraquat) 1.0 lb ai/ac + 0.625 lb ai/ac and Staple (pyrithiobac) .06 oz ai/ac. were broadcast over the no-tilled plots behind the planter. Roundup at 1.0 lb ai/ac was sprayed over the entire plot area two weeks after emergence. CyPro (cyanazine) at 0.75 ai/ac and MSMA (MSMA) at 1.5 lb ai./ac. was direct sprayed over the plot area as a layby treatment. Cotton was defoliated on September 21 with Superboll (ethephon) 1.5 lb ai/ac + Def 6 (tribufos) 1.5 lb ai/ac. Statistical analyses of the collected data were analyzed using analysis of variance procedures. Mean separation was accomplished using least significant difference (LSD) at the 5% level.

RESULTS AND DISCUSSION: Yields were good at all locations. There was no difference between variety performance within locations. Average yield of varieties at Holly Spring was 2742 lb seed cotton/ac; at Nesbit was 3138 lb seed cotton/ac; at Raymond was 3871 lb seed cotton/ac. Data is in Table 1.

Table 1. Seed cotton yields of FM 960BR, FM 960R, and FM960B2R

Variety	Nesbit	Holly Springs	Raymond
FM 960BR	3072	2700	3928
FM 960R	3390	2870	3867
FM 960B2R	2952	2658	3820
CV (%)	8.9	6.2	5.4
LSD (0.05)	n.s	n.s	n.s