



# COTTON VARIETY BY POPULATION: RESPONSE IN 2:1 SKIP-ROW PLANTING

Increasing numbers of cotton growers are interested in switching from 38-inch solid row plantings to 30-inch, 2:1 skip-row planting. This planting system would allow them to use the same 30-inch planter in cotton, corn, soybeans and other row crops. This trial was developed to answer grower questions about proper plant populations and variety selection in skip-row cotton, and whether or not skip-row cotton will produce yields substantially equal to solid row plantings.

## MATERIALS AND METHODS

A demonstration trial was conducted in 2012 at the Monsanto Learning Center at Scott, MS, to show the impacts and interaction of population by variety in 2:1 skip-row cotton plantings. Three cotton products were planted at four different populations. The products were DP 0912 B2RF, DP 1034 B2RF and DP1219 B2RF. Plant populations were 14,000, 28,000, 41,000 and 55,000 seeds/acre.

Cotton was planted on April 30 and harvested on October 10. Agronomic management was similar to local standards, including conventional tillage, weed management, insect management and irrigation as needed. Plant growth regulator (PGR) applications (4.2% mepiquat chloride; .35 lb. active ingredient per gallon) were significantly lower in the skip-row cotton than would normally be applied in solid-row cotton. The first PGR application of 10.4 fl oz/acre was made on June 22. The second and final PGR application of 14.2 fl oz/acre was made on July 6. Delayed and reduced PGR rates

allowed plants to produce more vegetative growth and fill the skipped rows. This additional vegetative growth also allowed plants to develop more fruiting positions to compensate for plants missing from the skipped rows.

## RESULTS

Some growers believe they may save money on seed and technology fees by planting skip-row cotton. This trial, across all cotton products, showed that plant populations per field acre (not acre of row feet) need to be in the same range as solid planted cotton. The seed that would have been planted in the skipped rows should be planted in the remaining rows to achieve an acceptable plant population for optimum yield potential. This results in the same seed cost per acre, with plants closer together down each row.

DP 0912 B2RF produced the highest yield in the trial (1390 lbs/acre) at 55,000 seeds/acre, and the second highest yield of 1182 lbs/acre at 41,000 seeds/acre.. DP 1219 B2RF produced the third highest



Figure 1. Cotton variety by population response in 2:1 skip-row planting.

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yield (1009 lbs/acre) at 41,000 seeds/acre. DP 1034 B2RF produced 838 lbs/acre at 41,000 seeds/acre. (Figure 1).

### SUMMARY COMMENTS

- Cotton growers can expect similar yields from either 38-inch solid rows or 30-inch, 2:1 skip rows, as long as the grower does what is necessary to optimize conditions for that row configuration: uniform seed spacing/placement, adequate bed preparation, clear middles to allow irrigation and drainage (Based on data from previous years).
- Indeterminate cotton products that produce more vegetative growth and spread and fill in the “skip,” perform better than determinate varieties in 30-inch, 2:1 skip-row plantings.
- Generally, less determinate cotton products should be planted at average per-field-acre populations for the variety.
- Skip-row planting allows for better light penetration before canopy closure.
- Skip-row planting may provide some level of moisture conservation advantage over solid-planted cotton.
- Growers should not expect to save on seed and technology costs by adopting the 2:1 skip-row pattern. Most or all of the seed that would have been planted in the skipped row should be evenly distributed in the planted rows.
- Growers should carefully read planter manuals to determine settings to achieve the desired population per acre of land, not per planted acre.
- PGR rates can be delayed and significantly reduced below levels typically necessary in solid-row cotton.
- Until near canopy closure, growers may reduce costs with banded ground applications of insecticides.
- Since cotton plants will eventually full the skipped row, all over-the-top applications from mid-to-late season, should be calculated as if the cotton were planted in solid rows.
- Particular care should be taken to keep the skipped row free of weeds until canopy closure.
- Fruit retention was observed to be exceptionally high in the skip-row cotton.

The information discussed in this report is from a single site, non-replicated, one-year demonstration. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

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