

2009 Demonstration Report



THE LEARNING CENTER

at Scott, Mississippi

Bedded Soybeans and Irrigation

In the Midsouth, precipitation can become scarce during summer months, therefore maintaining adequate moisture throughout the growing season is key to optimizing soybean yields. During dry weather conditions, many Midsouth soybean farmers irrigate their fields with flood irrigation utilizing either flat or raised beds. Flood irrigation with raised beds places the soybean plant in soil hipped in a row and the spaces between the rows are flooded with water. In a flood irrigation with flat rows the soybean is planted in the ground with no special preparation to the soil elevation. For both flat and raised beds levees are used to keep water on the field. Improper flood irrigation management can cause the soil to become water logged. Waterlogging is the anaerobic (absence of free oxygen) condition, which can reduce plant growth due to the lack of oxygen available at the plant roots. Waterlogged soil is less common when beds are raised, but can still occur in areas where it is difficult to remove irrigated water in a timely fashion.

Study Guidelines

In 2008 and 2009, a study was conducted at the Learning Center at Scott, MS to evaluate the effect of raised bed versus flat bed flood irrigation on soybean yield potential. Soybean products with different relative maturity (RM) were selected for the study and planted in a 38-inch twin-row configuration at 150,000 seeds per acre in both raised bed and flat rows. Other than planting configuration, all other management factors were kept consistent. Flood irrigation was applied to the plots as needed and was allowed to stand on the plots for 24 to 30 hours before draining.

Results

Yield results from the two-year study showed soybeans planted in a raised bed consistently out-yielded those planted on flat rows. Observations from the two years of data showed soybeans planted on raised beds yielded an average of 5 percent more than those planted flat. The wicking action of a raised bed system allows the soil surface to dry quicker and overcome the saturated and anaerobic conditions that occur during periods of excessive standing water. It also allows for quicker reentry of machinery into the field for more timely herbicide, fungicide or insecticide applications. The data also suggests that soybean products vary in their tolerance to excessive moisture, which may be taken into consideration when planting decisions are being made. Flood irrigation with raised beds requires additional ground preparation and planting can be more difficult; however, yield benefits from raised beds could make the additional work worthwhile for soybean producers in the Midsouth.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Technology Development by Monsanto and Design(SM) is a trademarks of Monsanto Technology LLC. ©2009 Monsanto Company.

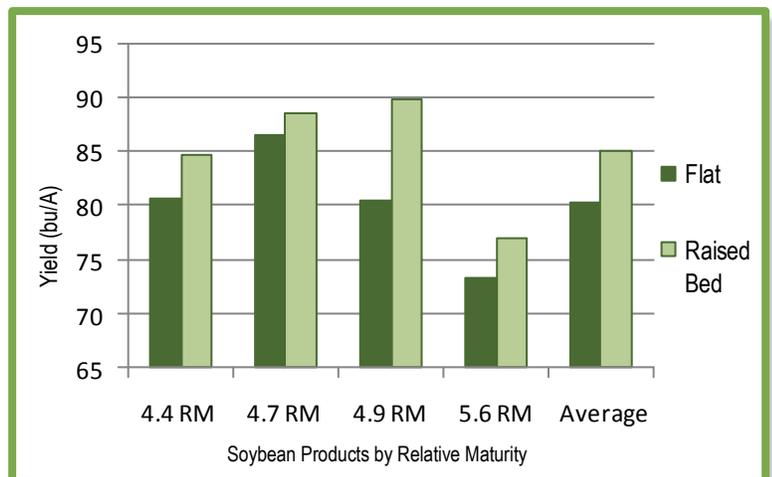


Chart 1. Yield results from 2008 Flat Versus Raised Bed Soybean Trial.

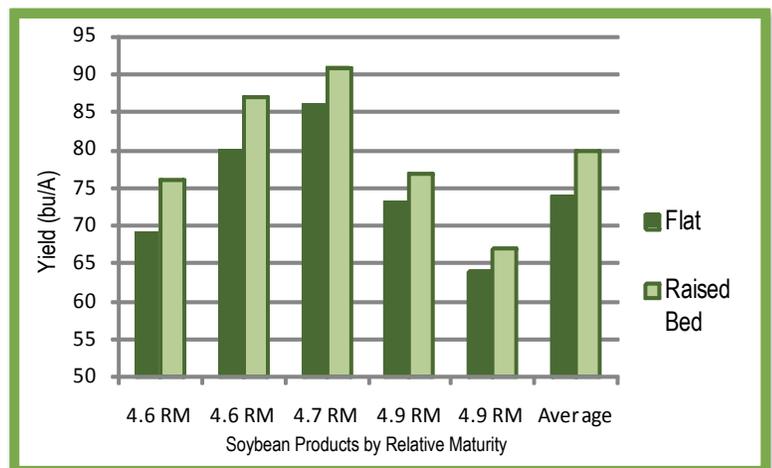


Chart 2. Yield results from 2009 Flat Versus Raised Bed Soybean Trial.

