

INFLUENCE OF IRRIGATION REGIME ON YIELD OF MAXXA AND PHYTOGEN-72

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Many Acala cottons go rank when over-irrigated, and the final yield is often less than maximum. Under-watering also reduces yield. The goal of this project was to find the depth of water application that would maximize yield. This is the end of the third season of an experiment in field 41A of the south 40, with 6 different application rates, using daily irrigation with a subsurface drip irrigation system. A RCB split plot design was used with 2 reps to compare Maxxa to PhytoGen-72. Each of the main treatment plots is 8 rows wide (30" row spacing) by 328 ft long. The application rates varied from 33% of normal to 144% of normal. The yields for the first two years are shown in the figure below. In order to smooth out the curves, a polynomial was fitted to each. PhytoGen-72 required 2-3 inches less water than the Maxxa to achieve maximum yield, and in both years the yield on the PhytoGen-72 was higher than Maxxa, so the water-use efficiency was much higher with PhytoGen-72. On the other hand, PhytoGen-72 was much more sensitive to over-watering. Backing off to the left of the peak by reducing the water by 5% caused a 1% reduction in yield on both varieties.

