Abstract

The cotton varieties grown in Mexico are late and vegetative growth is abundant. They thus require four irrigations and large investment in inputs. Late varieties are not suitable for regions such as the Comarca Lagunera, Mexico, where water is a limiting factor. Earliness is a characteristic that can be used to make water use more efficient and to reduce investment. The objective of this study was to determine the response of an early cotton variety (Laguna 89) to nitrogen rate and number of irrigations. Three irrigation treatments and six N dosages were evaluated during three consecutive years (1997, 1998, 1999). The irrigation treatments were two, three, and four irrigations. Nitrogen dosages were 0, 40, 80, 120, 160, and 200 kg ha⁻¹. Seed and lint cotton yield, yield components (number of bolls plant⁻¹, boll weight, lint percentage, and seed index), and fiber quality properties (length, strength, and fiber fineness) were measured. Year, number of irrigations and N rate affected all the characteristics measured, but there was no interaction among them. The three and four postplanting irrigation treatments showed the same seed and lint cotton yields. On the average, these two treatments outyielded the treatment of two irrigations by 65%. This latter treatment also showed the lowest yield components and fiber quality values. The response to N fertilization was low. The best seed and lint cotton yields were obtained with the dosage of 80 kg ha⁻¹. Yield difference between the best N rate and the 0 N rate was 9%.

Keywords

Gossypium hirsutum L., earliness, yield components, fiber properties.