RESEARCH PAPER

Simulated and observed yield of cotton based on boll dropping as influence by soil and foliar application nutrients

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Abstract : In cotton, flowering is a continuous process and 40 to 50 per cent set flowers (square) and bolls will shed due to nutritional deficiency or excesses of nutrient in soil or moisture stress. Dropping of the young bolls (Square drying) is one of the production constraints which is mainly due to imbalance and inadequate nutrition, to overcome this various soil nutrients where imposed along with foliar spray of potassium and boron. The field experiment was conducted with twelve treatments comprised of four fertility levels and three poly feed treatments at peak flowering and boll formation stage. Application of recommended dose of N, P_2O_5, K_2O and foliar application of murite of potash @ 5 kg/ha has recorded significantly higher seed cotton yield (2501.8 kg/ha) as compared to other treatment combinations. Similarly application of Multi-k as foliar spray (Poly feed of 45:0:13 kg/ha N, P_2O_5, K_2O) had recorded higher seed cotton yield (2486.5 kg/ha) as compared to poly feed (19:19:19 kg/ha N, P_2O_5, K_2O) and water spray treatments and physical optimum yield loss of cotton was estimated based on linear and quadratic equations. The equation was fitted using leaf area with number of boll dropped at different stages of crop growth. The application of recommended dose of nitrogen alone treatment, physical yield loss was 2835.2 kg/ha and 1240.4 kg/ha with the application of recommended dose of nitrogen and phosphorus and application of recommended dose of all three elements, the estimated physical yield losses was 219.5 kg/ha in comparison with recommended dose of nitrogen, phosphorus, potassium and foliar application of potassium @5 kg/ha at early and peak flowering.

Key Words : Boll dropping, Cotton, Foliar nutrient of potassium, Predicated yield, Nutrients

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