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Effect of Planofix and Fruitofix on MCU 5 Cotton

Boll shedding in cotton was attributed to either insect pests or physiological disorders. Plant regulators have been reported to be very effective in correcting some of the physiological disorders (Bhatti and Date, 1955; Negi and Avtar Singh, 1956; Bhardwaj *et al.*, 1963). Foliar application of Naphthalene acetic acid at 10 ppm was found to be useful on MCU 1, MCU 4, PRS 30/2 and Sujatha varieties (Bhat, 1972) and also on Krishna variety (Sudha Krishna Mukerji, 1973) of Cotton. However, the efficacy of NAA on MCU 5 cotton has not been so far reported. NAA is now commercially available as Planofix and Fruitofix. The present investigation was taken up to compare their efficacy and to fix up the optimum concentration and time of application.

A field experiment was conducted in the Agricultural University Farm, Coimbatore during 1974—'75. The soil was of loamy type with low nitrogen, medium phosphorus and potassium status. The experiment was conducted in a randomised block design with eight treatments, replicated thrice. The treatments were: T_1 spray of 30 ppm Planofix in 3 split intervals of 15 days after initiation of flowering, T_2 spray as in T_1 with Fruitofix, T_3 spray of 60 ppm of Planofix in 3 splits at intervals of 15 days after initiation of flowering and at 20 ppm Planofix 15 days thereafter, T_6 spray as in T_5 with Fruitofix, T_4 60 ppm of fruitofix in three plots, T_5 30 ppm Planofix followed by 20 ppm Planofix, T_7 water spray and T_8 no spray (Control). The net plot size was 6.5 × 2.25 m with a plant spacing of 75.0 × 22.5 cm. The crop was supplied with 60, 30 and 30 kg of N, P and K respectively per/ha. A high volume rocker sprayer was employed for spraying.

The date presented in Table 1 show that the number of bolls in the three concentration of Planofix *viz.*, 30, 60 and 50 ppm were 12.7, 10.0 and 17.3 while with Fruitofix it was 11.3, 9.3 and 15.3 respectively. Application of Planofix in two splits (30+20 ppm) was significantly superior to other concentrations. Regarding the percentage of boll set, Planofix recorded 27.0, 17.9 and 33.5 per cent as against 21.3, 15.6 and 26.2 per cent by Fruitofix under 30, 60 and 30+20 ppm. Thus Planofix was superior to Fruitofix at all the three concentrations with respect to boll retention and percentage of boll set.

TABLE 1. Effect of Planofix and Fruitofix on boll retention in Cotton

	Treatment T. No.	Boll number per plant	Percentage of boll setting	Yield of seed cotton (Q/ha)
T 1	30 ppm of Planofix in 3 splits	12.7	27.0	18.74
T 2	30 ppm of Fruitofix in 3 splits	11.3	21.3	16.73
T 3	60 ppm of Planofix in 3 splits	10.0	17.9	15.32
T 4	60 ppm of Fruitofix in 3 splits	9.0	15.6	13.48
T 5	30 ppm of Planofix followed by 20 ppm Planofix	17.3	33.5	21.76
T 6	30 ppm of Fruitofix followed by 20 ppm Fruitofix	15.3	26.2	18.84
T 7	Water spray	10.7	17.6	16.34
T 8	No spray (Control)	93.0	19.1	12.49
S. E.		1.1	—	1.08
C. D. at 5%		3.1	—	3.27

Among the different concentrations and time of applications tried, Planofix applied in two splits (30+20 ppm) recorded a maximum boll number (17.3) and percentage of boll set was 33.5. Planofix and Fruitofix at (30+20 ppm) registered 27.76 and 18.84 Q/ha followed by Planofix at 30 ppm with 18.74 Q/ha. Application of Planofix in two splits (30+20 ppm) thus was superior to the other treatments with respect to boll retention and yield.

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Evaluation of Speedy Moisture Meter

A rapid and reliable method of determining soil moisture content in the field with a simple and portable apparatus is an important need in irrigation engineering and irrigation agronomy. Researchers have devoted much efforts in developing gravimetric, chemical, electrical, nuclear, penetrometer, tension and thermal methods for the determination of the moisture content of soils. A chemical method using calcium carbide as a reagent is showing great promise.

The principle involved in this method is that a given quantity of moisture will react with calcium carbide to produce a specific volume of gas (acetylene). The reaction is as follows: $CaC_2 + 2H_2O = Ca(OH)_2 + C_2H_2$. Based on this principle, a device was developed in England, consisting of a pressure vessel in which the gas produced from the reaction is made to activate the pressure gauge located in one end of the vessel. The gauge is calibrated to read the percentage of moisture directly, based on the wet weight of the sample.

TABLE 1. Comparison of moisture determination with moisture meter and gravimetric method.

Soil sample series tested	Moisture content (%) Wet Basis		Dry Basis	
	Speedy Moisture meter method	Gravimetric method	Speedy Moisture meter method	Gravimetric method
1.	17.8	17.8	21.5	20.5
2.	19.0	17.2	23.4	20.8
3.	16.0	13.5	19.0	15.6
4.	19.5	17.4	24.2	21.0