RESEARCH NOTE International Journal of Agricultural Sciences, June, 2010, Vol. 6 Issue 2 : 655-656

Influence of male to female ratio on production of hybrid cotton seed (NHH-44)

D.B. WAGHMODE*, R.A. KATARE, P.K. WAGHMARE AND P.B. KEDAR
Marathwada Agriculture University, PARBHANI (M.S.) INDIA

Key words : Male and female parents, Ratio, production, Hybrid cotton seed and NHH-44.

Investigation on the influence of different male to female ratios in production of hybrid cotton seed (NHH-44) were carriedout under rainfed conditions at the Research Farm, Department of Agronomy, Marathwada Agriculture University, Parbhani during *Kharif* season of 1996-97. The experiment showed that the production of cotton seed was significantly good under 1:3 male to female ratio. It was optimum for pollination as it recorded more yield than other ratios *i.e.* September month recorded higher yield under 1:3 male to female flower ratios.

The production of hybrid seed in cotton is an expensive affair. In female parent the male sterility is developed artificially by way of removing the male parts of flower before anthesis and thereafter pollinating those so prepared female plant by way of putting pollens of desired parents with the help of manual labours. In this seed production, each and every bud produced on the female parents contributes in hybrid seed cotton. The study, therefore, undertaken to determine the optimum male to female ratio with different levels of treatments in cotton crop (NHH-44) in relation to cotton seed production in Marathwada region of Maharashtra state at Parbhani.

A field experiment was conducted during *Kharif* season in 1996-97, at Research Farm, Department of Agronomy, Marathwada Agriculture University, Parbhani. The soil of the experimental field was medium dark in colour, well drained and having moderate to high moisture retention capacity. Topography of the plot was fairly leveled. The soil was clayey in texture, medium in organic carbon, nitrogen and phosphorous and rich in potassium. The soil reaction was alkline. The bulk density of soil was 1310 kg/cm^2.

The cotton variety NHH-44 was used for the study. The experiment was conducted in a Factorial Randomized Block Design (FRBD), replicated thrice with 16 combinations. Out of them, the four treatment comprised of male to female flower ratios as main treatments *viz.*, P_1(1:3), P_2(1:4), P_3(1:5) and P_4(1:6).

The experimental field was thoroughly prepared by ploughing followed by three horrowings to achieve optimum tilth. The recommended doses of fertilizers were applied at the rate of 100:50:50 kg of NPK/ha from suphala (15:15:15) and urea (46 % N). The sowing was done by dibbling method. Thinning was done after 15 days of sowing. As well as three hand weedings and five harrowing were given to keep the experimental plot weed free and aerated. The recommended schedule of plant protection was followed to protect the crop against pest and diseases. Data on respective parameters were collected from randomly selected and labelled plants within the plot of each treatment.

The data pertaining to production of hybrid cotton seed were significantly affected by male to female flower ratios.

As regards the male to female ratios, it was observed that the use of 1:4 male to female ratio gave the higher crossings per plant but it was not significant. However, the conversion of crossing in number of picked bolls was significantly highest in 1:3 male to female ratio. Perusal

Table 1 : Influence of male to female ratio on factors governing the production of hybrid cotton seed (NHH-44)

Treatments	Factors							
	Crossing per plant	Picked bolls per plant	Seed index	Seed cotton yield kg/ha)	Cotton seed yield kg/ha)	Cultivation cost (Rs./ha)	Net returns (Rs./ha)	Cost : benefit ratio
P_1 (1:3)	133.58	19.08	6.25	164.74	102.24	6217	24730	5.00
P_2 (1:4)	132.58	13.91	6.38	104.66	65.83	5606	14575	3.62
P_3 (1:5)	126.83	14.91	5.94	111.03	67.97	5097	15847	4.13
P_4 (1:6)	146.08	14.16	6.23	89.63	54.61	4624	11329	3.47
C.D. (P=0.05)	NS	2.62	NS	29.80	19.46	297	1349	0.31

NS – Non significant

* Author for correspondence.