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THE EFFECT OF SOWING DATES ON THE YIELD OF MESTA AND THE INCIDENCE OF JASSIDS *Amrasca biguttula biguttula* ISHIDA.

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A field trial was conducted at Agricultural Reserch Station, Amadalavalasa with AMV 1 variety, mesta to study the effect of sowing dates on the incidence of jassids versus fibre yield. Sowings later to 1st fortnight of May suffers significant reduction in yield of fibre However, correlation between jassid incidance x fibre yield and planting dates x jassid incidence were not significant.

Mesta. *Hibiscus sabdariffa* (Roselle) is a best fibre crop. Mesta is extensively grown in the Northern districts of Srikakulam and Visakhapatnam of Andhra Pradesh in more than 1.0 lakh hectares Jassids, *Amrasca biguttula* Ishida is one of the major pests of this crop. Generally the pest occurs in severe form from late July to September and prefers the young crop, aged 45 to 60 days. It is observed from the literature that early plantings of mesta do have influence on the increase of yield (Kundu. 1964; Massey, 1974). However, information is lacking on the effect of jassid incidence under different sowing periods varsus fibre yield. Hence the present investigation was undertaken with standard varitey AMV, for two seasons successively (1978-79 and 79-80) to establish the relationship between sowing dates, percent jassid incidence vs. fibre yield.

MATERIAL AND METHODS

The experiment was laid in randomized block design with four replications and five sowing dates However, the sowing dates differ from first season to second season. During the first season, sowings at an interval of 20 days viz., on 1st May 20th May, 10th June, 30th June and 23rd June (Control). were done. In the second season, sowings at similar interval but on 15th April, 5th May, 25th May. 15th June and 5th July were done. A distance of 10 cm x 30 cm were maintained from plant to plant and row to row respectively. 40kg N, 20kg P_2O_5 and 20 kg K_2O/ha. were applied as basal dressing. A gross plot size of 4.2 x 3.6 sq. m and a net plot size of 4.0 x 3.0sq.m was maintained. All the recommended package of practices were adopted. The crop was allowed for natural infestation. Jassid nymphal counts from top three leaves of 10

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randomly selected plants from each treatment at 10 days interval from one month after germination were recorded. Plant height and base diameter at the base of the plant were recorded at the time of harvest. Plant population was maintained uniformly. For estimation of fibre yield the plants in a net plot (4.0 x 3.0 sq. m) leaving the border rows were retted.

RESULTS AND DISCUSSION

The data on jassid incidence, plant height, base diameter and fibre yield for the first and second seasons are presented in Tables I & II respectively.

1978 1979 Kharif season

Early sowing in the month of May (T_1 & T_2) recorded less number of jassids, while maximum incidence was recorded on the crop sown in the 2nd week of June (T_3.) The crop sown on 30th June recorded same number of jassids as that of the crop sown in the third week of May. A perusal of the data reveal that due to poor growth and stunted nature of the crop sown on 30th June, incidence and the preference of jassids was less. Hence, it is proved that jassids prefer the crop having an age of 40-60 days. An analysis of variance of jassid incidence showed significant differences among the treatments except T_2 and T_4 wherein the two treatments are on par. Treatments 1 & 2 in respect of plant height base diametet and firbre yield were significantly superior to all other treatments. Even though T_1 and T_2 recorded some jassid population, the impact of damage did not reflect on the fibre yield. The early sowings, T_1 and T_2 recorded an increase of 13.0 to 18.3q/ha more of firbre yield than the control. There was a gradual decrease in respect of plant height, base diameter and fibre yield from treatment 1 to 5.

1979 to 1980 Kharif season

An analysis of variance jassid incidences showed significant differences among the treatments except T_2 and T_4 wherein the two treatment were on par T_2 and T_4 (sown on 25-5-79 and 15-6-79 respectively) recorded more jassids than the rest of the treatments, thereby suggesting that jassids prefer young crop of the age of 40-60 days but not neither old nor very young crop. The results of 1978-79 in respect of jassid incidence indicated the same trends. Gradual decrease in plant height, base diameter and fibre yield were observed from treatment 1 to 5. An increase of 165.5 cm in height and 0.70 cm in girth was recorded in treatment 1 over treatment 5 Difference in fibre yield was so vast between different treatments (8.2 to 27 0p/ha).

Pooled analysis for the two years data in respect of plant height, base diameter and fibre yield were found to be highly significant. Correlation (r) between planting dates x fibre yield, jassid incidence x fibre yield and planting dates x jassid incidence were worked out. Negative correlation observed between planting dates x fibre yield, ($r = 0.959^*$) indicated that delay in planting results in decrease in yield. Both jassid incidence and fibre yield decreased gradually as the sowing date delayed. As the jassid incidence is gradually decreased so as the fibre

yield, suggesting thereby that jassid incidence is not having any direct bearing on the yield. However correlation between jassid incidence x fibre yield (r=0.404) and planting dates x jassid incidence r =0 839) are no significant.

It is concluded that mesta should be sown on or before third week of May so that at least one and half times to two times more fibre yield can be reaped than the late sown crop (sown in the first fortnight of June). Even though jassid damage is observed in early sown crop, the loss in yield is negligible.

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Table 1 Effect of sowing time on jassid incidence and plant growth and fibre yield (1978-79)

Fortnight	Date of sowing	Mean jassid population	Average plant		Average fiber yield in q/ha
			Height in cms,	Diameter in cms,	
F 1	1-5-78	5 d	319.0	1.79	23.8
F 2	20-5-78	8 c	287.6	1.46	18.5
F 3	10-6-78	12 a	241.4	1,23	11.5
F 4	30-6-78	8 c	172.7	0.91	4.3
F 5	Control 23-6-78	11 b	188.0	0.90	5.5
Pooled analysis 1978-79and 79-80			7.7	0.064	0.2

Average of four replications; Means having a common letter are not signiffcantly different at 5% level on Duncan's multiple range tester of data after logarithmic transformation of $x+1$

Table 2 Effect of time of sowing on jassid incidence and plant growth and fiber yield (1979-80)

Fortnight	Date of sowing	Mean jassid population	Average plant		Average fiber yield in q/ha
			Height in cm	Diamater in cm	
F 1	15-4-79	11 b	344	1.77	27.0
F 2	5-5-79	13 a	319	1.77	22.0
F 3	25-5-79	15 c	256	1.29	15.5
F 4	15-6-79	14 c	216	1.17	9.0
F 5	5-7-79	10 d	179	1.07	8.2
Pooled analysis 1978-79 and 79-80			7.7	0.06	0.2

Means of four replications; Means having a common letter are not significantly different at 5% level on Duncan multiple Range test of data after logarithmic transformation of $x+1$