

A Study to Find Out a Modified Japanese Method of Paddy Cultivation to suit Local Conditions

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The Japanese method of paddy cultivation as recommended by **Korakendra** has been adopted throughout India and increased yields have also been obtained. But in some places although increased yields are obtained, it has **been** found to be less profitable when compared to the local and other improved **methods**. The standardisation of the rice cultivation on a State-wide basis is not practicable because **varieties**, climate and **soil** conditions vary from place to place. Hence, trials have been conducted in various research stations in India to assess the increase in **yield** by adopting some of the methods like giving wider spacing between plants, heavy application of manures like cattle manure, compost and green leaf and fertilisers like ammonium sulphate and super-phosphate. The present study was undertaken to determine whether a **simpler** and less expensive method can be **evolved** which could be easily adopted by cultivators using the beneficial aspects of Japanese method of paddy cultivation.

Experimental.

The experiment was conducted during the second crop season (October to January) of the years 1958-'59, 1959-'60 and 1960-'61. The experiment was laid out in randomised blocks with six replications. The treatments were as follows:-

1. Japanese **method**; 5,000 **lbs.** of green **leaf**, 5 tons of compost, 200 **lbs.** of **ammonium** sulphate and 200 **lbs.** of super phosphate per acre.
2. Local Method ; 5 tons of compost and 40 tins of ash per acre.
3. Modified Japanese method I; 2,000 **lbs.** of green leaf, 5 tons of **compost**, **50 lbs.** of ammonium sulphate and 50 **lbs.** of superphosphate per acre.
4. Modified Japanese method II ; 3,000 **lbs.** of green leaf, 5 tons of **compost**, 100 **lbs.** of ammonium sulphate & 100 **lbs.** of superphosphate per acre,
5. Modified Japanese method III ; 4,000 **lbs.** of green **leaf**, 5 tons of compost,

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150 lbs. of ammonium sulphate and 150 lbs. of super phosphate per acre.

In Japanese method the seedlings were transplanted in lines at a distance of 10 inches. In modified Japanese methods the seedlings were raised according to Japanese method on raised seed beds using the usual quantity of manures. The transplanting was done without using rope, but approximately in lines at a distance of 10" with 3 seedlings per hole.

In addition to the manures mentioned above during 1960-'61, muriate of potash at the following rates were also applied.

Japanese method		80 lbs. per acre.
Modified Japanese method	I	20 lbs. per acre.
"	II	40 " "
"	III	60 " "

The compost and green leaf were applied before ploughing and the fertilizers were applied in two doses, half at planting and half, one month after planting.

Results and discussion.

The grain yield data for the different treatments recorded during the three years are given in the table below :

Yield of Paddy in lbs. per acre

Treatments.	Year of Experimentation.			Mean of three years.
	1958-'59.	1959-'60.	1960-'61.	
1. Japanese method.	2,671	2,521	1,137	2,110
2. Local method.	2,068	2,029	726	1,608
3. Modified Japanese method I	2,074	2,251	1,045	1,790
4. Modified Japanese method II	2,310	2,585	1,094	1,980
5. Modified Japanese method III	2,183	2,639	982	1,935
C. D. at 5%	Not Significant.	259	280	221

In general, all the treatments gave higher yield of grain than the local method.

The Japanese method has not given significantly higher yields over the modified Japanese methods II and III, is. the application of a heavy dose of green leaf,

compost, ammonium sulphate and super-phosphate as adopted in Japanese method of paddy cultivation has not given significantly higher yields than the modified Japanese methods II and III. Ghosh *et al* (1956) while reviewing the work on Japanese method of rice cultivation in

India reported that the heavy doses of inorganic fertilizers as practiced in **Japan** do not give economic returns.

The results also show that 50 lbs. each of ammonium sulphate and super phosphate with 2,000 lbs. of green leaf does not give significant increase in yield over the local method. Similarly the effect of manuring above 100 lbs. of ammonium sulphate and 100 lbs. of super phosphate over 3,000 lbs. of green leaf does not give significantly higher yields, Abdul Samad *et al* (1956) comparing the Japanese method of paddy cultivation with the local method have also reported that the excessive manuring does not give commensurate profit. Srinivasan *et al* (1956) have reported that the yield obtained from heavy manuring is not commensurate with the extra expenditure involved.

Modified Japanese method II where 100 lbs. of ammonium sulphate and 100 lbs. of super phosphate applied in addition to the basic dose of 3,000 lbs. of green leaf and 5 tons of compost gave the highest yield. Hence, it appears that any dose above this is not economical.

Summary and Conclusions.

The paper deals with the result of an experiment carried out for three years (1958-'59 to 1960-'61) for comparing the local methods of paddy cultivation with the Japanese method and the modified

Japanese methods of paddy cultivation. The results are as follows :-

(1) The Japanese method as well as the modified Japanese method of paddy cultivation have given significantly higher yields than the local method.

(2) Excessive manuring as recommended in Japanese method of paddy cultivation does not give commensurate profit.

(3) The economic optimum dose of manure for paddy under local conditions appeared to be 100 lbs. of ammonium sulphate and 100 lbs. of super phosphate applied in addition to a basal dose of 3,000 lbs. of green leaf and 5 tons of compost per acre.

References.

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