

have been found to be quite satisfactory for practical purposes. The fresh oil is used first for cylinders of engines and the waste oil from this is carefully filtered and used for shaft bearings. Hornsby special cylinder oil from Messrs. Massey & Co., was being used for sometime, later Valvoline oil from Messrs. Vacuum Oil Co., was used and now light engine oil from Messrs. Best & Co., is being used. The cost of these oils vary, from one another, a little and in quality no perceptible difference is noticed in the use of these oils.

In conclusion I may state that, even though a mineral oil may be more costly, vegetable oil is not at all desirable to be used as a lubricant if it is not freed from acid matter and does not satisfy the other conditions. A mineral oil possessing the required viscosity, flash point and high decomposing temperature can be obtained from oil firms and will be very satisfactory as such oil does not contain glycerine and contains hydrocarbons, which do not react with formaldehyde and sulphuric acid, which are essential for lubricating purposes, as such oils have a low sp. gr. and high viscosity.

A. K. SUBRAMANIA AIYER.

Paddy in the Musiri Taluk of the Trichy. District.

As one passes through the Kadarambam areas of the Musiri Taluq in the paddy season, one is struck with the excellent crops of paddy being grown there. The reason is that intensive cultivation is responsible for this. Paddy season extends from Ani to Margali (15th June to 15th December). Seasonal planting is considered absolutely necessary to achieve best results. The lands are generally under tank irrigation supplemented by wells. The latter are so very useful that Cumbu and Ragi are raised solely with their water as a first crop. Broadcasted crops are said to yield better than transplanted ones. The seed rate for broadcast paddy varies from 12 M. M. to 16 M. M. and that for transplanted paddy from 24 M. M. to 32 M. M. About 7 cartloads of leaves obtained from neighbouring forests are applied. A yield of about 5000 lbs. per acre is obtained. Improvements done in this

tract by the Agricultural Department are (1) the growing of green manure crops and (2) economic transplanting of paddy.

Under the first Dhaincha has been introduced. The ordinary practice in former years was to obtain leaves from forests and to supplement them by green leaves cut from the trees planted for the purpose. *Portia* and *Poinciana elata* are the common ones. Dhaincha is grown mixed with *cumbu*. Mixing it with *ragi* has been noticed in a few cases. The introduction of this crop has brought about results very advantageous to the ryot. The disadvantage is obvious as Dhaincha quickly smothers *cumbu* and reduces the yield. The growth has been 8' to 15'. The sowing of Dhaincha at hoeing time of *cumbu* is much deprecated by some ryots as it does not grow well later on and in several cases germination too, is considered unsatisfactory. The ryots are not willing to forego a portion of *cumbu* in favour of Dhaincha to grow it as a pure crop. In such cases the only way is to grow it mixed with *cumbu* and to try to put the growth of Dhaincha down as far as possible till *cumbu* is harvested by cutting the tops. In some cases, where this was done, the ryots were disappointed. This season was peculiarly favourable for its growth, by the frequent showers after sowing. When the plants were topped, side shoots which grew rapidly smothered the *cumbu*. Thus topping had not had its desired effect. Even with this disadvantage, the ryots have had some advantages this year as explained below.

The carting of leaves from forests after rains is the usual practice. The cultivation of paddy will last for 3 months and more after water is received in the tank or river as the leaves can only be slowly carted during the rainy season and with much difficulty as the way becomes very miry.

The value of permit per cartload of leaves has increased from one Rupee last year to Rs. 2/- this year. In addition the ryot has to pay about annas four per cartload to the middlemen who obtain for him the leaves. 20 bundles are carted and for collection of leaves it costs as much as 3 to 4 Rs. per cartload and the carthire from the

forest to his lands is Rs. 2 to 3 according to the distance, so that the total cost is about 8 Rs. per cartload. The ryot applies 7 cartloads per acre, the value of leaves being Rs. 50/- roughly.

By growing a mixed crop of cumbu and Dhaincha the ryot loses Rs. 30/- an acre on account of the less yield of cumbu and straw and the expense incurred in cutting down the Dhaincha than by growing a pure crop of cumbu. But, the Dhaincha crop gives sufficient quantity of leaves for the area on which it is grown. The value of the green leaves may be taken as Rs. 50/-, thus giving a gain of Rs. 20/- We hardly find a ryot going to the forest this year to collect the green leaf manure. The prohibition of cutting certain kinds of leaves from forests by the authorities, considered by the ryots to be of particular value for paddy is not felt. Besides, the yield is in no way diminished by the application of Dhaincha leaves while the ryots spend only a few annas towards the cost of the seed.

The following difficulties were brought to notice :—

Yield of cumbu is diminished. The cutting of Dhaincha crop is a difficult matter and involves much labour. The tips of pods injure the legs if the application is done after ripening of pods. Several ryots inform me that the effect of the crop on paddy after it is fully ripe is not so good and marked as when it is applied fresh and in full flower.

The advantages of sowing the Dhaincha crop pure are many :—

The germination would be closer, the plants would be thinner and more easily pulled up thus avoiding heavy harvesting charges incurred by sowing mixed with cumbu. The maturing of seed is also delayed, the plants being closer. If cumbu is sown pure in half the area it would bring in a greater yield. Thus, the growing of Dhaincha as a pure crop is recommended.

W. RAGHAVACHARI.
