

## INTRODUCTION

### Wider use of machinery in rice cultivation and harvesting in British Guiana.

The general practice in British Guiana for the cultivation and harvesting of rice by the peasants and small proprietors, is as described by Burnett<sup>(1)</sup> in the Agricultural Journal of British Guiana. The practice is to plough the field, puddle it under water with ox-drawn harrows and transplant 5 to 6 weeks old seedlings when the land has been made free from weeds. The crop is harvested by cutting with sickles or "grass-knives" and threshed by trampling or "mashing" with oxen.

But tractors were already used for ploughing a large percentage of the area in the Mahaicony district by 1936. Threshing machines were also already in use in this district. On a small area in Berbice both reaping and threshing machines were already in use by 1936. Recently, however, machinery has been used more widely for the cultivation of rice-fields and harvesting the rice crop.

H.E. Gadd, the General Superintendent of the Mahaicony/Abary Rice Development Scheme of British Guiana, gave an account of the "Mechanisation of Rice Cultivation and Harvesting" in this Colony, to the staff of the Department of Agriculture on February 17th, 1949. The talk is reported in the Farm Journal of British Guiana. (2).

### The problem of lodging or falling of the crop before harvest-time.

While discussing the type of padi that is suitable for mechanical harvesting, Gadd mentioned that it may be more profitable to harvest 18 bags per acre from a standing crop than 20 bags per acre from a crop that has lodged or fallen. The variety grown at present for mechanical harvesting is No. 79. It lodges or falls earlier than a variety suitable for mechanical harvesting should do.



Efforts are being made by the Department of Agriculture to produce a variety more suitable for mechanical harvesting than No. 79, and certain new varieties are actually being compared with No. 79 in planned varietal trials at the Mahaicony/Abary Rice Experiment Station.

A possible solution to the problem of lodging.

But while a variety that will stand erect for a longer period than No. 79 is being awaited, a possible solution to the problem of lodging or falling of the padi crop at harvest-time is to cut it with windrowing machines while it is still standing, allow it to dry in windrows and thresh it with combines equipped with special pick-up reels. Gadd considers that after the straw has dried in the windrows, the threshing machines would choke less frequently than in direct combining of a standing or a fallen crop. Also, a fallen crop is more expensive to harvest than a standing one, since it involves the passage of a greater amount of straw through the threshing machines, if all the ears or most of them are to be cut, and a large amount of straw causes choking of the machines. Moreover, in cutting a fallen crop a fair number of ears are left on the ground.

If the crop is cut early, i.e. before it falls, by a windrower, and threshed by picking up with a combine, neither would the straw be too moist for threshing nor would too much straw have to be picked up in order to gather all the ears.

Stahel (3) found that harvesting early or at higher moisture contents results in higher breakage in milling than if the crop were harvested at a certain optimum stage as measured by moisture content of the grain at the time of harvesting.

It is also necessary to know if windrowing at different moisture contents of the grain would result in significantly

different yields, because early harvesting causes a large number of grains to be shrivelled and light. (4).