HORTICULTURE NOTE NO. 33

RICE CULTIVATION BY DROPPING GRAINS OF PREVIOUS RICE CROP

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ABSTRACT

A recently discovered practical method of rice cultivation is now under close observation at Bubia rice model farm near Lae, Morobe Province. The management and husbandary practices applicable to this technique of rice cultivation are described. Some practical guidelines are also given.

INTRODUCTION

Under normal rice cultivation practices, it is common to find rice seedlings emerging throughout the rice field as a result of the rice grains dropped during the previous rice crop harvests or from the thrashing machine (Figure 1). Usually the emerged seedlings are destroyed when the field is ploughed again in preparation for another crop (Figure 2) using new transplanted seedlings. Even under rice ratooning practices these seedlings are killed by the application of herbicides.

The R.O.C. (On Taiwan) Agricultural Technical Mission to PNG was set up under an agreement between the two respective governments whereby the mission is to provide technical assistance to PNG farmers on the use of appropriate agricultural technology. Initial work commenced in 1990 whereby the mission set up a demonstration farm at Laloki, NCD and later Bubia, Lae Morobe Province. Laloki model farm concentrated on promoting vegetable and tree crop production while Bubia model farm was used to embark on a rice based mix farming system with vegetables. It was on this model farm (Bubia) that numerous trials were undertaken. This particular trial came about initially from mere observation and than successive croppings were further tested as an experiment. This report is thus a report of the observations made over four successive croppings.

The R.O.C. mission's experience with this technology in rice cultivation has shown that; after two days since the rice harvest the land is ploughed with a rotary soil tillage implement. The land is then left idle for two weeks during which it was discovered that the rice seeds dropped from the previous rice crop harvest have germinated and are growing well (Figure 3). From this stage on the rice crop is managed under typical rice cultural management. At about 105 days from land preparations the dropping grain crop is harvested (Figure 4). So far from our three successive harvests, we have managed five (5) tonnes per hectare of non hulled grain. This yield is similar to that of the main crop.The mission had observed until now that three consecutive rice crops can be obtained at the same yield of five (5) tonnes per hectare from the original plantings. The process could continue further than the three successive rice crops,

however, due to problems of brown plant hoppers this was discontinued in order to spell the rice fields to control the insect pests.

Another site of half (0.5) hectare paddy field (Figure 5) has been selected to again experiment this method to prove its viability (both economically and technically). Once proven to be successful, the technology could be made available to farmers in PNG. It is hoped that the farmers could share this experience with the mission and also that they can benefit from simplicity of the technology. Given its simplicity, we hope to encourage more farmers to grow rice.

CRITICAL METHODS

This technique is not difficult to adopt even if little attention is given to this technology, the following procedures should be adhered to in this order:

1. Plough the land using rotary implement within three days after harvest of the main crop. It is better to rotavate the soil twice to ensure even distribution of the dropped seeds.

2. Use the pre-emergence herbicide (Butachor, Lasso etc.) immediately after ploughing the land to control weeds.

3. Rice seedlings are grown up after two weeks, at which time fertilizer is applied to boost plant growth (normal rate of NPK at 100 kg./ha).

4. At three weeks of rice growth, thinning of seedlings is necessary.

Figure 1 - Usual sight of regerminated rice seedlings from Rice seed droppings.

Figure 2 - Plough Land with rotary, three days after germination.

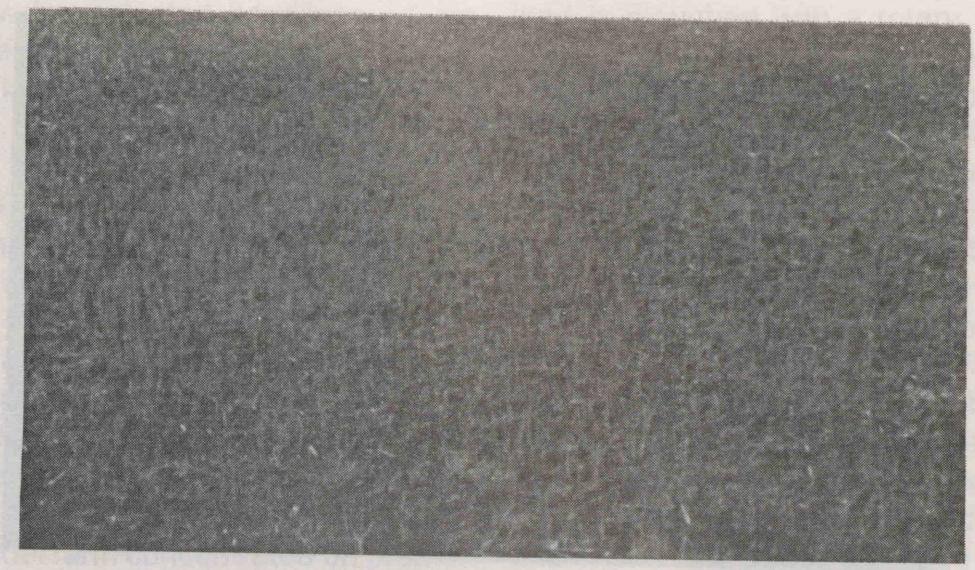

Figure 3 - Rice seedlings well established after 2 weeks from land preparation.

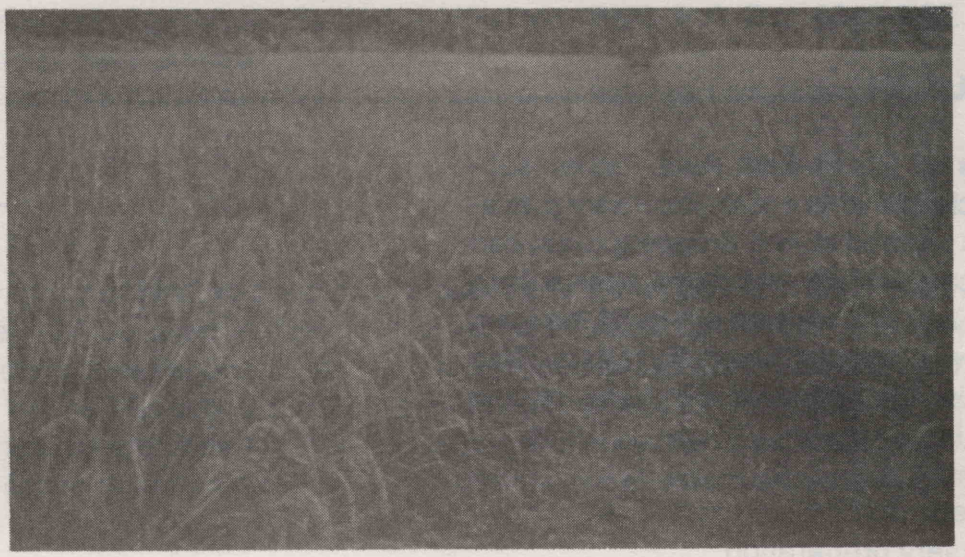

Figure 4 - The mature and high yielding rice crop from dropping grain field.

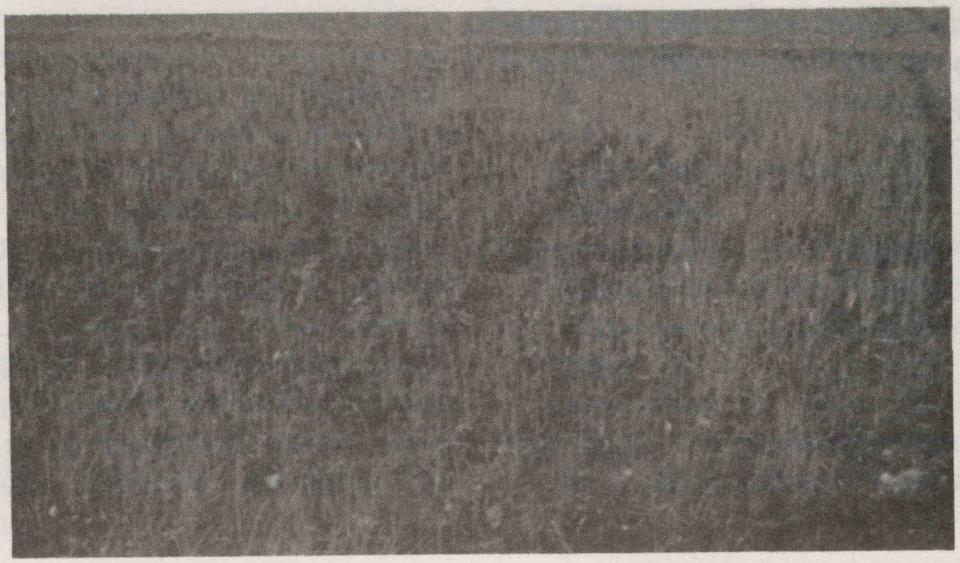

Figure 5 - Shows uniform well grown rice seedlings emerged from dropped rice grain in the paddy field.

5. Other cultural practices employed for the remaining period of the rice crop to harvest are the same as those for broadcast rice cultivation.

CONCLUSION

In areas of South-East Asia, under sub-tropical climate where cold winters are prevalent; this method of rice dropping grain can not be successfully practiced over a long period. Thus, this was never tried in the main rice growing areas of South-East Asia. This method is very economical in terms of cost savings in:

(a) Seeds and labour used in land and nursery preparation.

(b) Time between two crops under normal practices.

(C) Much simplier to adopt.

In developed countries where there is shortage of labour, this method will seem more appropriate. It is also applicable in developing countries such as PNG where machinery usage & availability is scarce and labour is usually not enough for land and nursery preparation.