

SUMMARY

A summary of the key points of the report on rice yields is presented below, divided, as is the report, into two sections: rice production by farmers who received both seed and training on rice production from TG-HDP and farmers who received neither improved variety seed nor training. In addition, recommendations regarding appropriate action are suggested.

KEY POINTS: FARMERS WHO RECEIVED IMPROVED SEED AND RICE PRODUCTION TRAINING

1. MEASURED RICE YIELDS - The average measured rice yield per rai was 155 kg per rai, with a range of 86 to 235 kg per rai. This average, however, is calculated based on a sample of only 9 farmers: TG-HDP promoted rice was nearly all harvested before the survey of yields began.

2. POPULATION CHARACTERISTICS - Most of the farmers who had received inputs and training from TG-HDP were relatively young, i.e., under 40. This would indicate that TG-HDP is training the new generation of farmers, a situation that bodes well for the future of highland agriculture.

3. FIELD ROTATION - Most fields were planted only one or two years before being fallowed. This indicates a really serious

fertility and/or weed problem. RECOMMENDATION. It is recommended that future studies attempt to look into the reason for such rapid rotation in greater depth. This is an indication of very serious rice production problems.

4. PLANTING METHOD - Farmers were asked whether they used TG-HDP recommended planting methods or traditional methods. In most cases it was not possible to determine by visual inspection which method had been used: nearly all farmers planted in rows and more or less on the contour.

5. WEEDING - Weeding was more often done three times in the Wawi area than in Nam Lang. Akha and Karens weeded more frequently than other tribes.

6. FERTILIZER - Very few farmers used fertilizer, and most indicated that they could not or would not purchase fertilizer without project help. RECOMMENDATION. It is suggested that a "go slow" approach be adopted vis a vis recommending use of fertilizer until farmers become more aware of its value and/or are better able to afford this input without project help.

7. CROP PESTS - Crop diseases were quite prevalent in both areas. However, villagers had little awareness of the extent to which the diseases were reducing their yields. It is recommended that rice diseases be made a major item in future TG-HDP agriculture plans: identification, impact on yields and prevention.

8. PESTICIDES - Little pesticides were used, and few farmers indicated a willingness or ability to purchase these inputs without project help. Most of the pests identified by farmers were above ground insects, birds and other animals. It is recommended that increased attention be paid to teaching hilltribe farmers how to determine when it is cost effective to use pesticides and, more importantly, to teach them how to use these potentially dangerous chemicals safely.

9. FARMERS' OPINIONS ON YIELDS - Of the farmers surveyed, 68% rated yields from TG-HDP rice varieties equal to or higher than traditional varieties. In addition, 57% indicated a desire to exchange their traditional seed varieties for TG-HDP promoted varieties.

10. FARMERS' OPINIONS ON ADVICE - Overall, farmers rated advice received on rice production as helpful, a very good indication that this project activity is achieving the goal of helping farmers to produce enough rice to eat.

KEY POINTS: FARMERS WHO RECEIVED NEITHER IMPROVED SEED NOR RICE PRODUCTION TRAINING

11. MEASURED YIELDS - There was a very wide spread in average yields, ranging from about 100 kg/rai up to over 400 kg/rai. Overall average was 266 kg/rai. Factors found to affect yields included weed density at harvest, number of years a plot had been cultivated in succession and the height of the rice stalk.

Factors found not to affect yields included number of times a field was weeded and the slope of the field.

12. MEASURED YIELDS BY AREA - Yields in the Wawi area were significantly higher than those in the Nam Lang area.

RECOMMENDATION. It is recommended that this situation be reflected in future TG-HDP rice production activities.

13. MEASURED YIELDS BY TRIBE - Among the tribes, the Akha at 280 kg/rai had the highest yields while the Lahu and Thai Yai were at the lower end, with 227 and 222 kg/rai, respectively.

14. MEASURED YIELDS BY VILLAGE - Among the villages, highest yields were measured at San Charoen Kao (355 kg/rai) and Huey Khrai (369 kg/rai). Lowest yields were found in Muang Pam (196 kg/rai), Luk Kaolam (181 kg/rai), Wanna Luang (171 kg/rai), Jabo (133 kg/rai) and Pang Kham Noi (120 kg/rai).

15. RICE VARIETIES - A wide variety of rice varieties were planted; however, as each variety had its own tribal name, it was virtually impossible to determine whether two different tribes were planting the same variety or not. RECOMMENDATION. It is recommended that a cross-tribal dictionary of rice varieties be prepared, preferably by a trained linguist, to determine the actual number and type of traditional varieties of rice grown. Without this information, yields of the different varieties cannot be compared.

16. FIELD ROTATION - 45% of fields surveyed had been planted for the first time (after a fallow period) in 1986. 71% had been

used only one or two years. Yields were found to drop rapidly with the number of years a field was used.

17. PLANTING METHODS - In most instances, no differences were noted in the planting methods used by farmers who said they used the TG-HDP recommended methods and those who said they used traditional methods. Nearly all fields appeared to have been sown in rows running roughly along the contour. RECOMMENDATION. It is suggested that the syllabus of training on rice production methods be reviewed to determine if farmers are being taught new material or are being taught something they already know and practice.

18. WEEDING TOOLS - Tools used for weeding varied from the first, second and third weeding, as well as with the number of years a field had been cultivated consecutively. The implications of this finding for TG-HDP are not immediately evident.

19. WEEDING SCHEDULE - Most farmers weeded their fields 2 or 3 times. Although the number of times weeded did not materially affect yields, the weed density at harvest did: the higher the density of weeds, the lower the yields. RECOMMENDATION. It is recommended that a detailed study of weed - crop competition be accomplished to determine the most cost-effective (in terms of yields and labor input) weeding regimen for upland rice.

20. WEEDING BY TRIBE - Akha and Karens weeded more frequently than other tribes, although the correlation between times weeded and yields was not statistically significant.

21. WEEDING BY AREA - Overall, farmers in Tambon Wawi weed more often than farmers in Nam Lang. This could be due to the higher population density in the Wawi area.

22. FERTILIZER - Few farmers used fertilizer on their rice, and few indicated that they would be willing/able to buy fertilizer if provided with improved seed by TG-HDP. RECOMMENDATION. It is recommended that project activities requiring the use of fertilizer on rice be carefully reviewed for feasibility.

23. CROP PESTS / PESTICIDES - Few farmers used pesticides on their rice, although most farmers indicated that they had insect or other pests. There was evidence of pesticide use on other crops, for example, people drinking water out of empty pesticide cans. RECOMMENDATION. Pesticides are very dangerous and should not be promoted or distributed without extensive preliminary training AND regular follow-up in the villages. If either the training or the follow-up cannot be provided, it is recommended that the use of pesticides not be encouraged.

24. RICE DISEASES - Much of the rice observed had some form of rice disease, although farmers did not seem to be very much aware of the impact of the disease on their yields. RECOMMENDATION. It is recommended that a plant pathologist train the survey team to identify rice diseases and relate to farmers what the disease means in terms of yields. Farmers should then be referred to

their local extension agent for advice on use of disease control agents.

25. FARMERS' OPINIONS ON YIELDS - 25.5% of farmers surveyed rated the yields of TG-HDP promoted rice as equal to or higher than local varieties. There was better acceptance in Nam Lang (61.3% rating TG-HDP equal or higher) than in Wawi (where 23.6% rated TG-HDP yields equal or higher). Figures on the number of farmers desiring to exchange some of their local variety rice for an equal quantity of TG-HDP promoted rice followed the same pattern: 59.0% in Nam Lang wanted to exchange versus 26.8% in Wawi.