

# Cultural Practices and Rice Yield

*An Image of the Level Barind*

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## Summary

This report illustrates the state of understanding the applied art and levels of farmers' current production practices of rice covering aus, aman and boro followed in the northern region of Bangladesh. It is largely based on the field observations made on 81 rice plots of 27 small, medium and large farmers of three locations under the AEZ 25 (Level Barind) namely Pooshi, Panchpaika and Tarafbajit of Sherpur, Kalai and Sadullapur thanas of Bogra, Joypurhat and Gaibandha districts respectively. Results indicate that irrespective of types, farmers' cultural practices appeared to be sub and above optimal which should be regarded as the prime factors responsible for much lower rice yields obtained in the farmers' fields. This is largely attributed to the lack of farmer's correct technological knowledge.

The average yield gap between the achievable potential and the farmers' actual yields was found 1.3t/ha in aus LIVs, 4.0 t/ha in aman MVs, 1.4t/ha in aman LIVs, 3.35t/ha in boro MVs and 1.5t/ha in boro LIVs, showing highest yield reductions were caused in the aman and boro MVs. Concurrent choices for modern and traditional rice varieties are still noticeable in the farmers' practice in this part of the country.

The most part of the farmers' needed amount of rice seeds come from his own production where quality maintenance is naturally improbable. Only the boro farmers procured a fraction of their seeds from BADC. Farmers are increasingly being familiar with the designed seedbeds in raising rice seedlings, though they lack the knowledge of fertilization and chemical protection measures on seedbed. Draft animals are disappearing from rural areas and are increasingly being replaced by power tillers. Dearth of organic fertilization and no green manuring practice are frequent in rice farming.

Recommended seedling age at transplanting is not maintained. In most cases, older seedlings are used. Transplanting is done random and on non-corded lines. Corded line transplanting is yet to be adopted by farmers. Most part of the rice fields are transplanted within recommended time period. Correct spacing per hill at transplanting, in most cases, is not maintained by farmers. They tend to use wider spacings at transplanting on most aus and aman and half of boro plots. Use of optimum number of seedlings per hill was a very rare scene except in case of a part of the transplanted aus plots.

Farmers lack serious attention regarding thorough weeding of rice plots with adequate frequency. Applied irrigation is found satisfactory only at dough stage of crop development.



At other stages, over depth of irrigation leads to misuse of extremely valuable for drought prone northern region ground and surface water resources.

Insect and disease problems are generally ignored by farmers in aus and aman. In boro, however, insect control is preferred over disease control by most farmers. In both the insect and disease control, farmers apply lower rates of pesticides leaving chances of doubts about proper control. Only 70% of the farmers could afford use of sprayer in applying insecticides, while others followed indigenous less effective methods.

Fertilization practice is dominated by imbalanced combination of plant nutrients and improper doses as well as inadequate N- topdressing frequency. Applied rates of fertilizers are either much more or much less than preferable. In addition, in most instances, N- topdresses are conducted late. Though advised otherwise, farmers prefer to apply N- fertilizer (urea) as basal.

More use of inputs at improper stages of crop development leads to wastage of the expensive inputs and thus to increase of production costs whereas inadequacy of applied inputs resulted in higher unobtained yields in all the three types of rice.

Large farmers spent more on production, but small farmers earned greater net profits per hectare of production in aman and boro but Aus. Moreover, they proved more efficient in resource utilization than the rest categories of farmers.

Turn-around time between aman and boro is used only by the farmers in growing short duration rabi crops, while that between boro and aus/ aman is wasted. Only a smaller number of farmers obtained credit from formal and informal sources for sustaining production. However, it is not clear whether most farmers were financially solvent enough to sustain production of all the rices.

Extension service is inadequate for better motivation of farmers. Only 1/3 of the farmers got training on some of the cultural practices but only less than half of them decided to apply their acquired knowledge into practice which was, however, still doubtful. No clear relationships could be established between category of farmers and the levels of inputs they applied.

Therefore, attainment of highest possible yields in those rices and thereby maximum profits may be plausible only if farmers are well equipped with required advanced technological knowledge and needed inputs and other relevant supports and most authentically, if they apply the knowledge correctly in the field.