Annals of Sri Lanka Department of Agriculture. 2006.8:361-364.

SHORT COMMUNICATION

ASSESSMENT OF QUALITY PARAMETERS OF SEED PADDY PRODUCED IN THE SOUTHERN PROVINCE OF SRI LANKA

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INTRODUCTION

Seed paddy production is a profitable venture. The country needs 4.4 million bushels of seed paddy per year. Out of which 15% is supplied as certified seed through various sectors by the multiplication program of the Department of Agriculture (Department of Agriculture, 2004). There is a high possibility of varietal purity deterioration with increase in number of cycles of multiplication. Certain limits have been imposed to regulate the quality standards of seed paddy.

MATERIALS AND METHODS

Each paddy sample represents a lot. Maximum lot weight for paddy was 25000kg. Sampling officers draw samples according to the rules of International Seed Testing Association (ISTA, 2004) and send a composite sample to the laboratory with a separate sample for moisture determination. A request form is also sent along with detailed description of the crop.

Whole number of samples received from private seed growers during the selected period in each district is included in the study. After the testing procedure in the laboratory, sample acceptance or rejection is determined by quality compared with the standards. Rejected percentage for each category was calculated depending on number of total rejected samples of respective district, irrespective of other causes for rejection.

In seed testing, mixing of other distinguishable varieties, noxious weed seeds, damaged seeds and other crop seeds were considered. The maximum number permissible for 500 grams for these factors is 100, 5,200 and 0 respectively for certified seed. Appearance and smell also should be at acceptable levels.

Germination test determines the maximum germination potential of a seed lot. Seed moisture content is determined by constant temperature oven method.

Laboratory test results of 5 seasons during the period *maha* 2002/03 to *maha* 2004/05 were considered for this study.

RESULTS AND DISCUSSION

A sample was rejected even if one factor concerned for quality certification exceeded the limit. Seed paddy from Galle district showed the highest rejection in all seasons. It was much higher than in other two districts and always over 50%. In Matara district the total sample rejection was lower than in Hambantota district except in *yala* 2003 when it was between 30-40%. Sample rejection in Hambantota was around 50% (Figure 1).

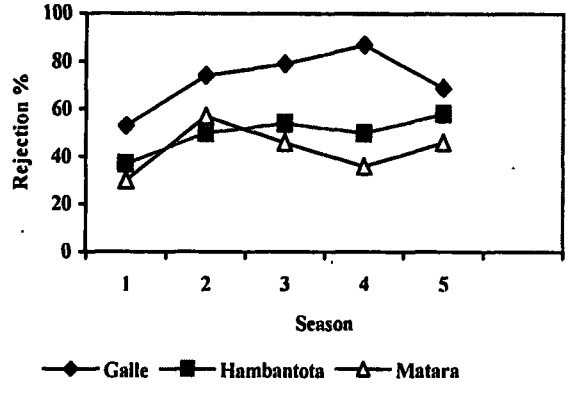

Figure 1. Percentage samples rejected in Galle, Hambantota and Matara districts during *maha* 2002/03 to *maha* 2004/05.

Seed sample rejection due to moisture content showed more or less the same trend for each district. Hambantota being a drier area has an unusual high percentage of rejection due to moisture. Samples received from government farms in the same area were accepted for moisture, (unpublished data) showing farmer ignorance about drying seed lots properly (Figure 2).

Seed sample rejection due to weed seeds was comparatively low in Matara district. Galle district has shown the same trend but total rejection was much higher. Seasonal influence on weed population may contribute to weed seed production which finally affects the quality of the lot. Both districts fall under the wet zone and hence have similar climatic conditions.

Seed sample rejection due to weeds at Hambantota district showed an increasing trend throughout the period. Rotational water issues and sub optimal weed controlling may be the reason for increased weed population in Hambantota. Special attention must be paid for weed control by seed growers in Hambantota to avoid sample rejection (Figure 3).

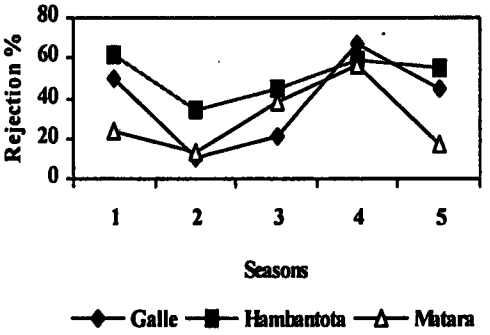

Figure 2. Percentage samples rejected due to moisture during *maha* 2002/03 to *maha* 2004/05.

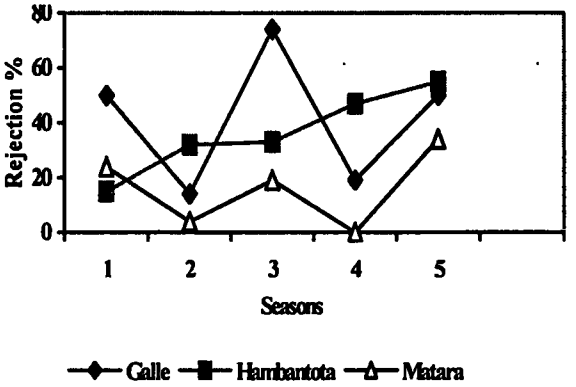

Figure 3. Percentage samples rejected due to weed seeds during *maha* 2002/03 to *maha* 2004/05.

Rejection of seed samples due to poor germination was identical in Galle and Matara districts. High seasonal influence was seen in both districts. Bad weather conditions prevailing in the wet zone during harvesting periods might cause low germination. Low percentages of rejection due to poor germination in Hambantota could be due to favorable weather conditions that prevailed during harvesting (Figure 4).

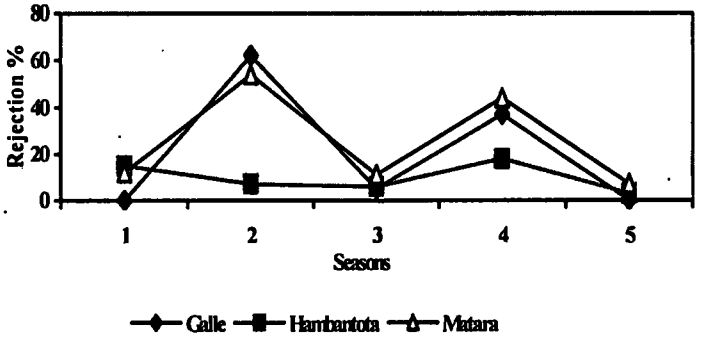

Figure 4. Percentage seed sample rejections due to poor germination during *maha* 2002/03 to *maha* 2004/05.

Seed lot rejection due to other distinguishable varieties (ODV) was higher in Galle and Matara districts compared to Hambantota district.

Mixing of other varieties could be due to various reasons but small holdings in Galle and Matara districts with different varieties could be a major reason for high percentage of ODV (Figure 5).

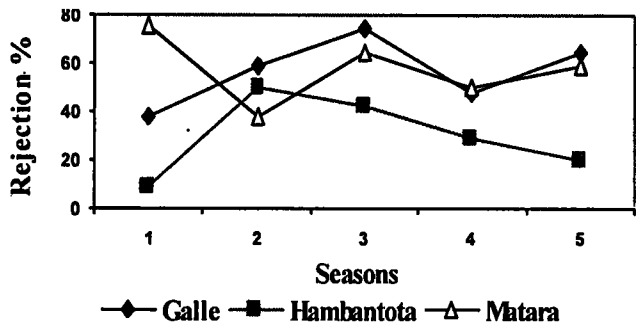

Figure 5. Percentage seed sample rejections due to other distinguishable varieties during *maha* 2002/03 to *maha* 2004/05.

CONCLUSIONS

50-80% of seed lots in the certified seed program in Galle district have been rejected mainly due to high number of ODV weed seeds and moisture contents. This could be minimized by intensive farmer training, using proper weed control methods and using proper post-harvest operations.

40-50% of seed lots in the certified seed program in Hambantota district have been rejected mainly due to high number of weed seeds and moisture content. This could be minimized by using proper weed control methods, drying seed lots properly and using proper machinery for threshing.

30-50% of seed lots in the certified seed program in Matara district have been rejected mainly due to high number of ODV and high moisture contents. This could be minimized by intensive farmer training on seed production and proper drying of seed lots.

Seed lot rejection due to poor germination was seen in *yala* seasons in Galle and Matara districts. Hence special attention is required in these districts to minimize rejections.

ACKNOWLEDGEMENTS

The author wishes to thank Dr. K.K.S. Fernando, Director SC&PP and Dr.K.A.Mettananda, Deputy Director SCS, Gannoruwa, for the encouragement given to carry out this work.

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