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Seasonal effects on cooking and eating quality traits of some improved Sri Lankan rice varieties

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The current trend in rice breeding research is directed towards improving the rice varieties with consumer acceptable grain quality traits as it reaches a wider population. Cooking and eating qualities of rice are one of the major components of rice grain quality, in many rice production areas of the world. Amylose content (AC), gelatinization temperature (GT) and gel consistency (GC) are considered to be the most important traits closely related to the cooking and eating qualities of different rice. Therefore understanding the relationship between these parameters and variation due to different environmental conditions are necessary for rice breeding programme in developing rice varieties with consumer acceptable grain quality traits.

Twelve improved Sri Lankan rice varieties [Bg, Bw and At and Basmathi 370, (introduced variety)], cultivated in *Yala* (2006) and *Maha* (2006-2007) seasons at the Regional Rice Research and Development Center (RRRDC), Bombuwala were analyzed for AC, GT and GC, for possible variation due to seasonal difference in these parameters and for correlation of GT and GC to AC.

AC of selected improved Sri Lankan rice varieties varied from 23-30 %. Statistically significant differences were observed in AC between rice varieties ($P<0.05$). However, variation in AC due to seasonal difference was insignificant ($P>0.05$). Selected Bg, Bw and At varieties had high AC (25-30 %) and Basmathi 370 had intermediate AC both in *Yala* (23.34 ± 0.26) and *Maha* (23.44 ± 0.21) seasons. GT of the selected rice varieties varied from high, high - intermediate and low and GC either hard, medium or soft. Little variation of GC was observed between the two seasons. No variation of GT was evident due to the seasonal difference. There was no correlation between AC and GT ($r = 0.21$), AC and GC ($r = 0.12$) and GT and GC ($r = -0.16$) of rice varieties tested in this study.

These findings will be useful in rice breeding when choosing selective germplasms for development of new rice varieties with different functional values including cooking and eating characteristics.

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