Effects of hydro-priming on emergence, growth and yield of maize (*zea mays*)

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ABSTRACT

Poor crop establishment is a major problem for subsistence farmers in rain-fed and poorly irrigated environment. Seed soaking overnight with water known as hydro priming, before sowing is a simple technology that farmers can use to improve crop establishment and increase yield. A field experiment was conducted to evaluate the effects of hydro priming durations on emergence, growth and grain yield of maize in Wedza District, Zimbabwe. Three maize seed varieties Pioneer 30G19, PAN 53 and SC 513 were hydro primed for 8, 12 and 16 hours and non primed was used as a control. Hydro priming resulted in fewer days to germinate and emerge in seeds soaked for 12 and 16 hours. PHB 30G19 had germinated in 8, 12 and 16 hours of hydro priming. A significant increase in height was noted within the first 6 weeks after emergence in all the three varieties used thereafter there was no significant change in height. Yield of grain maize increases as seeds were subjected to hydro priming and the yield of control treatment were low. In PHB variety there was no significant difference in yields when hydro primed for 12 or 16 hours whilst PAN required 8 to 12 hours of priming to yield more. SC variety required either 12 or 16 hours duration to get higher yields. From the field experiment it is concluded that 12 hours was the optimum duration of hydro priming for maize is very effective for improved germination and emergence under field conditions. It is an easy and cost effective technology for resource poor farmers in Zimbabwe.