

Sathakupt Ken Nagashima 2015: Root Yield and Quality of Cassava in the New Production Area. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Professor Chareinsak Rojanaridpiched, Ph.D. 94 pages.

The new cassava production area in Thailand has recently expanded to both the lower Northern and the Western part of the central region. However, few data are available on the cassava varietal performance in these areas. The cassava varieties were tested in regional yield trials in these areas. A total of 11 cassava yield trials were conducted in Uthai Thani, Kamphaeng Phet, Kanchanaburi and Suphan Buri provinces in the early and late rainy seasons of 2008-2010. Combines analyses of the data of six cassava varieties, namely Huay Bong 80, Huay Bong 60, Kasetsart 50, Rayong 9, Rayong 5 and Rayong 1, showed that the effect of environmental factor, locations, effected fresh root yield, root starch content and dry root yield more than varietal factor. Location of Uthai thani in late rainy season of 2008/09 had the highest dry root yield.

The native variety, Rayong 1, had the lowest average fresh root yield and root starch content at 3,590 kg/rai and 18.40 percent, respectively. The five new varieties namely Huay Bong 80, Huay Bong 60, Rayong 9, Kasetsart 50 and Rayong 5, all produced fresh root yields and starch contents greater than Rayong 1 (4,308-4,598 kg/rai, 22.72-24.90 percent, respectively). Fresh root yield and dry root yield was not significantly different among these five new cultivars. Nevertheless, for root starch content, Huay Bong 80 and Rayong 9 had contents higher than Huay Bong 60, Kasetsart 50 and Rayong 5. In general, Huay Bong 60 and Huay Bong 80 were suitable in the test locations, while Rayong 9 was suitable only in the more productive environment. Huay Bong 80 had a root starch content higher than Huay Bong 60; however, its potential yield was less than that of Huay Bong 60.

The correlation between fresh root yield, root starch content and dry root yield with the environmental factor, it was found that fresh root yield had a significantly correlated with organic matter and available form of phosphorus in the soil. Root starch content correlated with total rainfall and number of rainy days while negatively correlated with soil pH. Dry root yield correlated with the number of rainy days while negatively correlated with soil pH. However, this correlations were estimated from only 11 locations that would provide only the preliminary results. It is suggested that more trials are necessary.

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