

Noppasool Samutthong 2007: Effects of Amount and Rate of Watering on Growth and Yield of Cassava. Master of Science (Agriculture), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Ed Sarobol, Ph.D. 37 pages.

The demand for cassava root is increasing because of the government policy in producing ethanol, the alternative energy, from cassava root. One approach to increase the total production of cassava root is to irrigate cassava plants during the dry period. Thus, the experiment was designed to study the effects of amount and rate of watering on growth and yield of cassava cultivar Huay Bong60 at the Khao Hin Son Research Station, Chachoengsao province during May 2005 to May 2006. A randomized complete block design was used with 3 replications. Treatments were control (T1, cassava under rainfed condition without additional irrigation); additional watering of 30 mm at one time /mo (T2), split twice /mo (T3, 15/15mm) and split 3 times /mo (T4, 10/10/10mm); additional watering of 45 mm at one time /mo (T5), split twice /mo (T6, 22.25/22.25mm) and split thrice /mo (T7, 15/15/15mm); additional watering of 60 mm split twice /mo (T8, 30/30mm) and split 3 times /mo (T9, 20/20/20mm). Additional watering was done in the dry period (November 2005-March 2006) during the course of the experiment. Cassava was planted in May 2005 and harvested in early May 2006. The results indicated that cassava in T9 yielded significantly greater than T1 (9107 vs 5228 kg/rai). Surprisingly, yield differences of cassava among T2 to T8 were not detected in this experiment. The greatest harvest index was obtained from cassava in T9 and T7 (0.73 and 0.72) whereas the lowest (0.59) was observed in T1. These differences were significant. No significant differences were observed among treatments for root starch content, stem and leaf fresh weight and root numbers/plant. Similar and Greatest starch yields were obtained from T6 and T8 (2,643 vs 2,732 kg/rai, respectively). From this study, considering cassava root yield, ease of management and water saving, it can be concluded that if cassava irrigation in the dry period is needed, watering cassava at the rate of 30 mm split twice /mo is recommended. If water availability is not limited and the greatest yield and maximum net return are desired, watering cassava at the rate of 60 mm/mo (split 3 times) is suggested.

Noppasool Samutthong

Student's signature

Ed Sarobol

Thesis Advisor's signature

2 / 05 / 2007