

Pornpun Surakanpinit 2012: Effects of Natural Water Resources and Planting Dates on Growth and Antioxidant Activity of Water Spinach (*Ipomoea aquatica* Forsskal). Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Miss Pariyanuj Chulaka, Ph.D. 69 pages.

The influences of natural water resources and planting dates on growth and antioxidant activity of water spinach were investigated at Amphoe Phak-Hai, Phra Nakhon Si Ayutthaya province during August 2008 to May 2009. There were 3 experiments. Experiment I was done to compare the growing sites of 3 cultivars of water spinach (bamboo-leaf, green- and red-stem types) between upland and swamp. The results showed that the growth of water spinach in swamp was significantly higher in stem length, fresh and dry weights of stem than that of upland site. The antioxidant activity in green- and red-stem type were higher than bamboo-leaf type. Experiment II was studied the growth of 3 cultivars of water spinach in different locations (up-stream, down-stream and swamp). The results showed that the growth of water spinach in terms of swamp was highest in stem length, fresh and dry weight of stem. Antioxidant activity and vitamin C content of water spinach grown in 3 locations were not significantly. Nevertheless, green- and red-stem types showed higher antioxidant activity and vitamin C content than bamboo-leaf type. Experiment III was done in swamp to compare 3 planting dates (April, August and November) of 2 cultivars of water spinach (green- and red-stem types). The results showed that both cultivars grown in April were significantly higher in stem length (114.46 cm), fresh weight of stem and leaf (58.69 and 16.19 g, respectively) and dry weight of stem and leaf (4.07 and 1.48 g, respectively) than grown in August including antioxidant activity (85.96 %) and vitamin C content (45.56 mg/100 g fresh weight). However, the number of leaf (15.40) and antioxidant activity (83.04 %) those grown in November were higher than grown in August.

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Thesis Advisor's signature