

Pawinee Kamwut 2010: Effects of Water Deficit on Growth, Yield and Seed Oil Content of Sunflower (*Helianthus annuus* L.). Master of Science (Agriculture), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Nawarat Udomprasert, Ph.D. 100 pages.

The study on the effects of water deficit on growth, yield and seed oil content of sunflower was carried out using a Stripplot design in RCB with 3 replications. The vertical plot consisted of two sunflower cultivars namely Pacific 33 and Pacific 55. The horizontal plot consisted of three water stress treatments: control (T_1) : plants were watered to field capacity throughout the experiment; water stress during flower initiation (T_2) : water was withheld during flower initiation until wilting and plants were then rewatered, and water stress during anthesis (T_3) : water was withheld during anthesis until wilting and plants were then rewatered. The study was conducted in the experimental field of Agronomy Department, Faculty of Agriculture, Kasetsart University, Kamphaeng Saen Campus, Nakhon Pathom province during November 2007 to March 2008. The results indicated that water deficit at anthesis (T_3) caused the greatest reduction in stem diameter of sunflower. However plant height, disc size, dry weight accumulation and seed yield were not affected by water deficit. The results also showed that water deficit at both flower initiation (T_2) and anthesis (T_3) had no effect on seed oil content of sunflowers but altered levels of some fatty acid, especially in Pacific 33 cultivar which had higher level of behenic acid, a saturated fatty acid, under water stress conditions.

Student's signature

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