

## The effect of different levels of vermicompost and plant density on growth and developmental factors, seed yield and oil content of evening primrose (*Oenothera biennis* L.)

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### Abstract

This experiment investigated the effects of different levels of vermicompost and plant density on growth and developmental factors, seed yield and oil content of evening primrose (*Oenothera biennis* L.). The research was set up as a factorial experiment on the basis of Randomised Complete Block Design (RCBD) with three replications in the experimental field of the Agricultural faculty of Ferdowsi University of Mashhad (FUM) during 2008-2009. The treatments included 4 levels of vermicompost (0, 2, 3 and 5 kg.m<sup>-2</sup>) and 3 levels of plant density (9, 12 and 20 pl.m<sup>-2</sup>). During the flowering period, plant height, number of side branches, number of capsules and seeds per capsule at main stem and side branches were measured separately. The oil of the seeds was extracted by using Soxhlet. The results showed that the simple effects of vermicompost and plant density were significant on the number of capsules and seeds per capsule of the main stem and side branches, as well as oil yield. The highest plant height and oil yield were obtained at the highest level of vermicompost, and the highest number of seeds per capsule of the main stem and side branches were obtained at average levels of vermicompost (3 and 5 kg.m<sup>-2</sup>). Increasing the plant density decreased the number of side branches, capsules and seeds per capsule of the main stem and side branches significantly. However highest oil yield obtained in the highest level of plant density. There was a significant interaction effect between vermicompost and plant density on the number of side branches, the number of seeds per capsule of the main stem and side branches.

**Keywords:** *Evening primrose, Yield, Vermicompost, Plant density*