

Effect of N- fertilizer on the medicinal milk thistle productivity

Tabatabaei, S.M.F¹, Omidbaigi², R and Nobakht, A³

1,3- Horticulture Department, College of Agriculture, Tehran University

2- Horticulture Department, College of Agriculture, Tarbiat Modarres University

Milk thistle (*Silybum marianum* L.), an annual herbaceous plant belongs to the *Asteraceae* family. It is one of the most important plants in the modern pharmaceutical industries. From the seeds of milk thistle some drugs such as Legalon, Durasilymarin and Hegrimarin are produced cure liver diseases. The main purpose of this investigation that took place in Alborz Experimental Station was to find out the effect of different levels of N-fertilizer on growth, seed yield and silymarin and silybin content of the said plant. The effects of four levels of N (0, 50, 120 and 200 kg/ha) on the basis of randomized complete block design with four replications in every treatment were studied. The N-fertilizers were given at four different stages: After seed germination; at stem initiation and at flowering stages. To study the effect of Nitrogen fertilizers the measured plant height, No. of capitula per plant, No. of seeds per capitula, 1000 seeds weight, seed yield and silymarin and silybin content in seed were measured.

On the basis of the results, N-fertilizer had a significant effect on the plant height, No. of seeds per capitula and capitula diameter. The largest plant (83.59 cm), the largest capitula per plant (19.38), the widest capitula diameter (4.76 cm) and also the largest No. of seeds per capitula (123.4) obtained from the plots received 200 kg/ha N-fertilizer. The lowest one (60.56, 9.48, 3.15 and 86 respectively) produced in control treatment (without N-fertilizer). Nitrogen had also significant effect on the seed yield and active substances of milk thistle. On the basis of these results although N-fertilizers had significant effect on growth, development and seed yield but it causes decrease on active substances (Silymarin and silybin content) of milk thistle.