

INFLUENCE OF WATER LIMITATION ON SEED VIGOR OF LENTIL (*LENS CULINARIS MEDIK*)

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ABSTRACT

In order to investigate the effect of water limitation on seed-filling period and seed vigor of lentil (*Lens culinaris Medik*), four lentil cultivars including Varzaghan and ILL4400 of Macrosperma type; Ziba and ILL6206 of Microsperma type were studied in a field at 25 %, 50 %, 75 % and 100% field capacity (FC). Levels of FC applied from the start of flowering and then stopped in the entire reproductive period. The vigor of lentil seeds was assessed by mean germination rate and electroconductivity (EC) testes. At 25 % and 50 % FC, duration of seed-filling period reduced by about 41-148 degree-days (DD). This was resulted in decreasing mean seed weight, compared to 75 % and 100 % FC. Seed vigour of all cultivars, at 25 % and 50 % FC were significantly lower than that of 75 % and 100 % FC. Maximum seed vigour (MSV) was achieved at 15-40 DD after mass maturity (MM, end of seed-filling period), as tested by germination rate, while MSV was attained at 28-63 DD after MM, as measured by EC. It was, therefore, concluded that MSV occurs some times after MM and that water limitation could lead to decreasing in seed weight and MSV in lentil cultivars.

Key words : *lentil, seed vigor, seed weight, water limitation.*