

RESEARCH ARTICLE

Effect of sowing environments on radiation interception and growing degree days in linseed (*Linum usitatissimum* L.)

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SUMMARY

The field experiment was laid out in Split Plot Design with three replications. The treatments consisted of 6 dates of sowing D₁: 40th MW, D₂: 41st MW, D₃: 42nd MW, D₄: 43rd MW, D₅: 44th MW and D₆: 45th MW as main plot treatment and 3 cultivars V₁: Kiran, V₂: Garima, V₃: RLC-4 as sub plot treatment at college of Agriculture latur during *Rabi* season. The data presented revealed that duration required for emergence ranged from 6 days under different date of sowing in different cultivars tested whereas in P₃ (branching to flowering) and P₄ (flowering to capsule formation) which are critical growth stages from the seed yield point of view, ranged from 17 to 22 days and 22 to 27 days, respectively. The data revealed that, the total heat requirement during the crop life cycle ranged from 1221 °Cd to the 1514 °Cd. The heat load, reported a decreasing trend as the sowing time was delayed. Decreasing trends in accumulated growing degree-days was observed with successive delay in sowing of all the cultivars. The data further revealed that the heat requirement was almost double, during reproductive growth stages than the vegetative growth stages. As regards the total thermal requirement of cv. KIRAN, it required maximum thermal units as 1514 °Cd in first (D₁) date of sowing at MW 40. This cultivar recorded the lowest thermal requirement as 1334 °Cd in sixth (D₆) date of sowing at MW 45. Cultivar Garima required maximum thermal units as 1270 °Cd when linseed crop was sown in MW 40. This cultivar recorded the lowest thermal units as 1334 °Cd under (D₆) treatment (MW 45). Cultivar RLC-4 recorded the highest thermal requirement of 1416 °Cd in (D₁) MW 40. This cultivar recorded the lowest thermal unit as 1221 °Cd under sixth (D₆) date of sowing at MW 45. The photosynthetic active radiation (PAR) recorded periodically in different treatments data revealed that at 30 DAS the minimum and same value were recorded in almost all the treatments. However, as the crop growth advanced the absorption rate increased abruptly, in all the treatments except D₄ during the period of 40-50 DAS. The increase in absorbed PAR was almost higher in treatments D₁ and D₂, which persisted up to 70 DAS. Thereafter a gradual decrease in PAR absorption was noticed till 110 DAS *i.e.*, physiological maturity. However in treatment D₄ the abrupt decrease during 90 to 100 DAS was also noticed. The increased PAR from 40 DAS to 70 DAS indicated a proper source sink relationship because of proper canopy development.

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