

Biochemical responses of brown sarson (*Brassica campestris* L.) genotypes to water stress under mid hill conditions

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SUMMARY

The drought tolerance of *Brassica campestris* genotypes viz., KBS-3, KDH-06, KS-101, KLM-40, KLM-1 and KLM-4 was investigated after exposure to drought stress at various growth stages in a pot experiment. Water stress imposed at branch initiation, flower initiation and siliquae formation stages. Data of various biochemical parameters (total chlorophyll content, chlorophyll stability index, total free proline and total oil content) was recorded which revealed significant differences among the various *Brassica campestris* genotypes for chlorophyll content and proline accumulation. Total chlorophyll content of all the *Brassica campestris* genotypes declined due to drought stress at all the growth stages. Genotype KBS-3 showed least reduction in chlorophyll content during branch initiation and siliquae formation stage. There was significant increase in osmo-regulating substance proline under water stress and KBS-3 accumulated highest proline. Drought treatment at different growth stages reduced grain yield significantly. Greater reduction in grain yield was observed when stress was imposed at siliquae formation stage. Average yield was found greater in KBS-3 and least in KLM-4. The better osmoregulation ability under drought stress conditions in KBS-3 proves it as drought tolerant cultivar. The findings of the present research investigation recommended the growing of KBS-3 in the drought prone areas to obtain high economic yield even in adverse condition.

Key Words : Brown sarson, Drought, Chlorophyll content, Proline

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