

# Lipid and fatty acid distribution in leaf and seed during borage development

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Lipid and fatty acid distribution in leaf and seed during borage (*Borago officinalis* L.) development were investigated. At all growth stages, there was an increase of seed dry weight, while leaf dry weight was practically still constant. The fatty acid composition of borage leaves and seeds was qualitatively similar, but quantitatively highly different. In leaves, the polyunsaturated  $\alpha$ -linolenic was the predominant fatty acid during all stages and it was positively correlated with stearidonic acid, but inversely correlated with linoleic,  $\gamma$ -linolenic, oleic, and palmitic acids. In seeds, the polyunsaturated linoleic acid was the predominant fatty acid during all stages and it was positively correlated with  $\gamma$ -linolenic, oleic, and stearic acids, but inversely correlated with palmitic,  $\alpha$ -linolenic, and stearidonic acids. Lipids were composed of neutral lipids and polar lipids, which had different distributions in leaves and seeds during borage development. The neutral lipid levels were higher than those of polar lipids at all seed-ripening stages and at leaf first stage. At intermediate and final stages, the levels of leaf neutral lipids were weakly lower than those of polar lipids. The variation in lipid and fatty acid distribution of leaves and seeds during borage development may be important as an indication of the potential utility of *Borago officinalis* L. as a raw material source for useful industrial applications.

**Keywords:** Borage (*Borago officinalis* L.), seed, leaf, lipids, fatty acids, development.

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