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Response of phosphorus application on seed yield and fatty acid composition in fodder pea (*Pisum arvense* L.) genotypes in subtropical climate

Ertan Ates* and Hazim Serkan Tenikecier
Faculty of Agriculture, University of Tekirdag Namik Kemal, Suleymanpasa-Tekirdag, Turkey
*Corresponding author e-mail: ertan_ates@hotmail.com
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Abstract
This study aimed to assess fatty acid composition, seed yield, and morphological characteristics of two fodder pea genotypes depending on different doses of phosphorus application. The highest number of pods plant^{-1} (27.66-28.00), pod length (6.37-6.47 cm) and 1000-seed weight (126.12-126.42 g) were recorded at 60, 90 and 120 kg P_2O_5 ha^{-1} treatments. The main stem length and the number of seeds pod^{-1} ranged from 119.77 to 122.00 cm and 6.11 to 6.22, respectively, in fodder pea genotypes at all P_2O_5 treatments. In fodder pea genotypes, the highest seed yield was recorded (2.51, 2.49 and 2.51 t ha^{-1}) at three doses (60, 90 and 120 kg P2O5 ha^{-1}). Fatty acid compositions did not differ among the fodder pea genotypes. Application of 60 and 90 kg P_2O_5 ha^{-1} increased the myristic (0.19 %), palmitic (17.03-17.05 %), heptadecanoic (0.20-0.22 %), stearic (7.13-7.14 %), oleic (16.39-16.42 %), linoleic (59.96-60.21 %) and linolenic acid (11.03 %) contents of fodder pea seeds. Application of 60 kg P_2O_5 ha^{-1} was, therefore, recommended for high seed yield and myristic, palmitic, heptadecanoic, stearic, oleic, linoleic and linolenic acid contents in fodder pea under subtropical conditions.

Keywords: Fatty acid, Fodder pea, Morphological characters, Phosphorus doses, Seed yield