

## EFFECT OF THE FOLIAR APPLICATION OF BORON, PHOSPHORUS AND POTASSIUM ON THE GRAIN YIELD OF FORAGE PEAS ON ACID SOIL

Dalibor Tomić\*, Nikola Bokan, Vladeta Stevović,  
Dragan Đurović, Milomirka Madić

University of Kragujevac, Faculty of Agronomy, Cara Dušana 34, Čačak, Serbia  
\* dalibort@kg.ac.rs

Soil acidity is one of the factors that limits growth of many legumes, because in such conditions certain nutrients are less available to plants. As forage pea (*Pisum sativum ssp. arvense* L.) has often been grown on acid soils, special attention should be paid to proper mineral nutrition. The aim of the study was to estimate the effect of foliar fertilization with boron, phosphorus and potassium on plant growth, grain yield and yield components (number of nodes with pods per plant, number of pods per plant, number of grains per plant) on forage peas, on acid soil. The experiment was set up in pots (15 L volume, one plant per pot) filled with soil substrate (Glaysol type, pH<sub>KCl</sub> 4.8) in the 2013. Cultivar of forage peas Javor (Institute of Field and Vegetable Crops, Novi Sad) was sown in five replications. Treatments with foliar fertilizers included: control (without fertilization), boron (Bor-feed, Haifa, Israel at the concentration of 0.1%) and phosphorus and potassium (P<sub>52</sub>K<sub>34</sub>, Haifa, Israel at the concentration of 1%). Foliar treatment are carried out two times: at the beginning of intensive growth and two weeks after. Significantly higher plant height was recorded at phosphorus and potassium treatment (72.6 cm) compared to boron (60.4 cm) ( $P < 0.05$ ). Foliarly applied boron positively affected the yield components, especially grain number per plant, so that grain yield in that treatment was significantly higher (0.64 g) compared to control (0.36 g) and treatment with phosphorus and potassium (0.45 g). Positive results on individual plants suggested the need to investigate the effect of foliar application of these elements in field conditions.

Key words: peas, foliar fertilization, boron, phosphorus, potassium, grain yield.

## UTICAJ FOLIJARNE PRIMENE BORA, FOSFORA I KALIJUMA NA PRINOS ZRNA STOČNOG GRAŠKA NA KISELOM ZEMLJIŠTU

Tomić Dalibor\*, Boka Nikola, Stevović Vladeta,  
Đurović Dragan, Milomirka Madić

Univerzitet u Kragujevcu, Agronomski fakultet u Čačku, Cara Dušana 34, Čačak, Srbija

\* dalibort@kg.ac.rs

Kiselost zemljišta jedan je od faktora koji ograničava gajenje mnogih leguminoznih biljaka, jer su u takvim uslovima pojedina hraniva manje dostupna biljkama. Kako se usevi krmnog graška (*Pisum sativum ssp. arvense* L.) često zasnivaju na kiselim zemljištima, posebnu pažnju treba posvetiti pravilnoj mineralnoj ishrani. Cilj rada bio je da se na kiselom zemljištu analizira uticaj folijarne prihrane borom, fosforom i kalijumom na porast biljaka, prinos zrna i komponente prinosa (broj rodni kolenaca po biljci, broj mahuna po biljci, broj zrna po biljci) na pojedinačnim biljkama krmnog graška. Eksperiment je zasnovan u 2013. godini u saksijama (zapremine 15 L, jedna biljka po saksiji) napunjenih zemljišnim supstratom (Pseudoglej, pH<sub>KCl</sub>4,8). Sorta krmnog graška Javor (Institut za ratarstvo i povrtarstvo, Novi Sad) posejana je u pet ponavljanja. Primijenjena su tri folijarna tretmana: kontrola (bez đubrenja), bor (Bor-feed, Haifa, Izrael u koncentraciji od 0,1%) i fosfor i kalijum (P<sub>52</sub>K<sub>34</sub>, Haifa, Izrael u koncentraciji od 1%). Folijarna prihrana izvršena je u dva navrata: na početku intenzivnog porasta i dve nedelje nakon toga. Folijarni tretmani nisu značajno uticali na visinu biljaka u odnosu na kontrolnu varijantu, ali je značajno veća visina biljaka zabeležena na tretmanu sa fosforom i kalijumom (72.6 cm) u odnosu na tretman sa borom (60.4 cm) (P<0,05). Folijarna prihrana borom pozitivno je uticala na komponente prinosa, posebno na broj zrna po biljci, tako da je prinos zrna na ovoj varijanti bio značajno veći (0.64 g) u odnosu na kontrolu (0.36 g) i tretman sa fosforom i kalijumom (0.45 g). S obzirom na pozitivne rezultate na pojedinačnim biljkama, uticaj folijarne primene ovih elemenata bi trebalo proveriti i u poljskim uslovima.

Ključne reči: krmni grašak, folijarna prihrana, bor, fosfor, kalijum, prinos zrna.

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