

EFFECT OF NITROGEN NUTRITION ON THE TECHNOLOGICAL QUALITY OF WINTER TRITICALE

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ABSTRACT – Effect of nitrogen nutrition on the technological quality of winter triticale

Technological quality of two winter triticale cultivars (Favorit, Trijumf) depending of nitrogen nutrition was investigated. Nitrogen fertilizers are applied in four doses: $N_1= 60 \text{ kg N ha}^{-1}$, $N_2= 90 \text{ kg N ha}^{-1}$ and $N_3= 120 \text{ kg N ha}^{-1}$. Analysis of sedimentation, gluten content, and rheological flour properties were done. High N fertilization significantly increased these quality traits in both cultivars. The highest sedimentation value and gluten content established with application of 120 kg N ha^{-1} . Triticale cultivars are reacted positively to nitrogen increasing, but rheological flour properties of triticale kept on the level of C₂ quality group. By the analysis of variance established high significant differences in mean values of sedimentation, wet gluten content and water absorption among the cultivars (A), years (B) and supplied nitrogen doses (C). All interactions (AB, AC, BC and ABC) were significant for wet gluten content, but for sedimentation only AB interaction, while of water absorption was only significant interaction BC.

Key words: triticale, nitrogen nutrition, technological quality, sedimentation, gluten

APSTRAKT

U ovom radu je ispitivan uticaj različitih doza azota na tehnološki kvalitet dve sorte ozimog tritikalea (Favorit i Trijumf). Primenjene su tri doze azota u prihranjivanju: $N_1= 60 \text{ kg N ha}^{-1}$, $N_2= 90 \text{ kg N ha}^{-1}$ i $N_3= 120 \text{ kg N ha}^{-1}$. Urađene su analize sedimentacione vrednosti, sadržaja glutena i reološke osobine brašna i testa. Rezultati su pokazali značajno povećanje vrednosti ispitivanih osobina kvaliteta sa povećanjem doze azota. Najveće vrednosti sedimentacije i sadržaja glutena ostvarene su pri primeni 120 kg N ha^{-1} . Sorte tritikalea su pozitivno reagovala na povećanje doze azota, ali su se reološke osobine brašna zadržale na nivou C₂ kvalitetne grupe. Analizom varijanse su ustanovljene visoko značajne razlike u srednjim vrednostima za sedimentaciju, sadržaj glutena i apsorpciju vode između sorti (A), godina (B) i doza azota (C). Interakcije AB, AC, BC i ABC su bile visoko značajne za sadržaj glutena, a za sedimentacionu vrednost samo interakcija AB, dok je za apsorpciju vode bila visoko značajna interakcija BC.

Ključne reči: tritikale, ishrana azotom, tehnološki kvalitet, sedimentacija, gluten

