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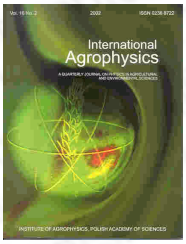

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previous paper back to paper's list next paper

The effect of sowing density on the lodging and mechanical properties of rape stalks

(get PDF)

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abstract In this study, the mechanical properties of rape stalks are expressed by means of stalk rigidity determined in bending, and by means of dynamic shearing energy per unit of stalk cross section area. Experiments were made using winter rape of the Jupiter variety, grown at sowing densities of 20, 40, 60 and 80 plants/m with nitrogen fertilizer applied at 240 kg/ha. The mechanical propeities of the stalks were aifected by the conditions of plant growth. Sowing density was observed both to have significant effects on plant lodging and on the strength characteristics of rape stalks. It was found that sparsely sown plants had the best mechanical parameters of stalks for resistance to lodging and were characterized by tripled rigidity of the stems.

keywords rigidity, dynamic shearing energy, stem cross section area