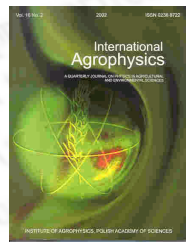




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### Geometry of cereal stalk cross-section

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abstract Accuracy of determining mechanical properties of the stalk depends, to a large extent, on the accuracy of determining characteristics of the sample cross-sectional geometry. Accurate calculations are very difficult due to geometrically complex shape of this cross-section. Generally, the cross-section is assumed to be shaped like a filled hollow or hollow ellipse and the stalk material to be homogeneous and mechanically isotropic. The paper presents two new, more accurate methods for determining cross-sectional area and the moment of inertia of the stalk cross-section. The first method is an application of a measuring microscope, the second one an application of a PC image analysis programme.

keywords cereal stalk, mechanical properties, image analysis