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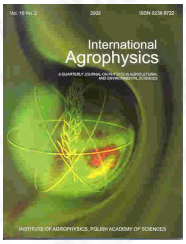

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Aerodynamic and geometric properties of amaranth seeds

(get PDF)

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abstract Geometrical properties (thickness, width and length) of individual amaranth seeds were measured by means of an optic device. The measurements allowed us to be calculated the values of seeds bearing surface for esti- mating aerodynamic properties. The determination of aero- dynamic properties was performed using prototype ap- paratus adapted to suit the size of amaranth seeds. With such parameters as: dynamic pressure, seed mass and seed bear- ing surface basic aerodynamic properties: critical velocity, coefficient of aerodynamic resistance and coefficient of fineness were calculated. Critical velocity was found de- pendant on seed bearing surface, width, length and mass of the seed. With an increase of these parameters the critical velocity increased linearly and the coefficient of fineness decreased following the same formula. Both relationships were described with linear equations.

keywords amaranth, seeds, geometrical features, aerodynamic properties