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**DEVELOPMENT OF A NEW SYSTEM FOR MEASURING THE COEFFICIENT
OF DYNAMIC FRICTION OF AGRICULTURAL CROPS**

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ABSTRACT In this research a simple and low-cost method for measuring the coefficient of dynamic friction of agricultural crops was developed and a system based on it was designed and calibrated. The system made it possible to obtain the coefficient of dynamic friction with a wide range of sliding velocity values. Calculation of the accelerated motion of a body on an inclined surface was the base of the system design. Then, the coefficient of dynamic friction of sugarcane billets sliding on a common steel surface was determined in two states of 1) wet surface and 2) dry surface and with two types of tests, i.e. a) by single billets, and b) by set of billets. A linear equation of the coefficient of dynamic friction against sliding velocity was obtained that indicated the decrement of the coefficient relative to the sliding velocity. In addition, results showed that coefficient of dynamic friction obtained by single billets were influenced by surface wetness more than by set of billets.

Keywords: Coefficient of dynamic friction, Acceleration calculation, sugarcane billet.