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ИССЛЕДОВАНИЕ МАТЕМАТИЧЕСКОЙ МОДЕЛИ РАСПЫЛЕНИЯ ЖИДКОСТИ ЦЕНТРОБЕЖНЫМ ДИСКОВЫМ РАСПЫЛИТЕЛЕМ

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Ключевые слова

Pre-sowing seed treatment significantly impacts the yield of agricultural crops. Using modern, effective pre-sowing seed treatment methods ensures good yields. A modern and highly effective pre-sowing seed treatment method involves creating an artificial seed coating: seed dressing, encrusting, and pelleting. To achieve a uniform and homogeneous seed coating, it is necessary to select the optimal operating modes for the equipment used (seed dressing, encrusting, and pelleting). Centrifugal disc atomizers are recommended for applying liquid components of varying viscosities to seeds. Centrifugal disc atomizers are widely used in the creation of artificial seed coatings, including dressing, encrustation, and pelleting. Liquid component atomization efficiency directly impacts the quality of the resulting coated seeds and energy consumption, and depends on numerous factors, including the disk design, equipment operating parameters, and the properties of the applied liquid. To improve the efficiency of creating artificial seed coatings, as well as the efficiency of spraying liquid components using a centrifugal disc atomizer, a key component of artificial seed coating equipment, this paper examines a mathematical model of liquid component droplet size as a function of centrifugal disc atomizer parameters. The relationship between atomization efficiency and parameters such as disk radius, disk rotation speed, liquid flow rate, and number of blades is determined. The influence of these parameters on droplet size is also determined. The results of the study identify areas for optimization of each disk atomizer parameter and propose a theoretical basis for the design of centrifugal disc atomizers.

***Key words:** artificial casing, disc atomizer, seeds, spraying, drops.*

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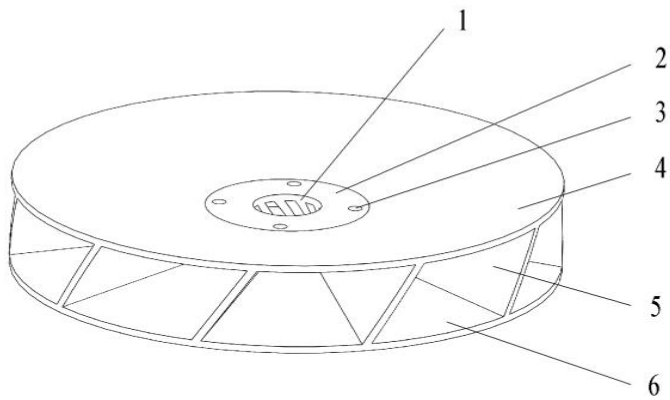

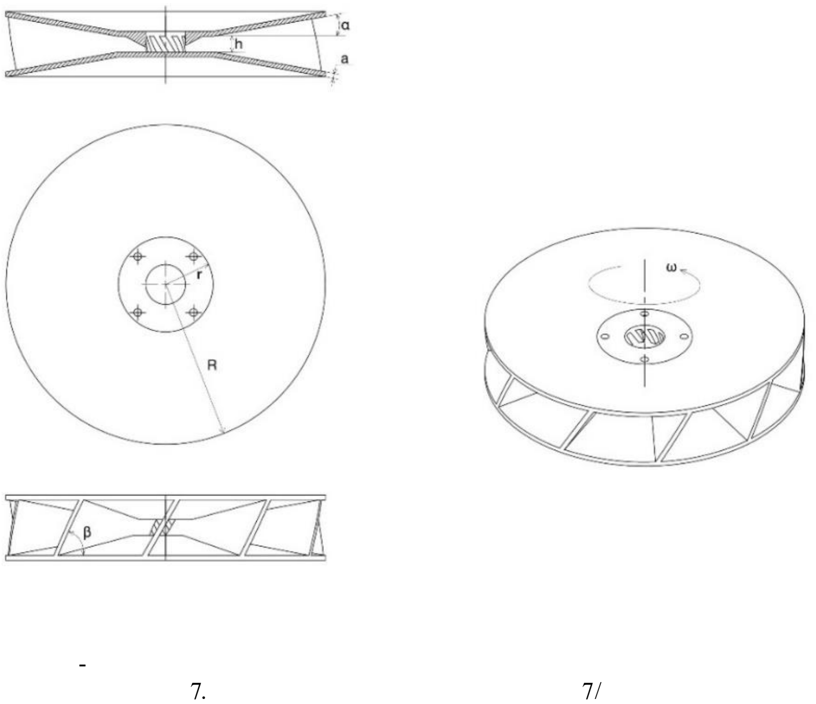

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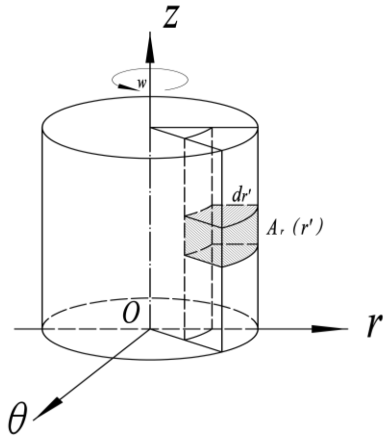

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Заключение

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