

## ABSTRACT

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### USE OF CONTINUOUS FLOWING BLOWER WITH VERTICAL AIR STREAM IN BARLEY, WHEAT AND CRIMSON CLOVER SEEDS

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The seed separation based on aerodynamical properties can be carried out to remove poor nourished or empty seeds and impurities. Air separation can be used alone or in conjunction with other separation as in air screen cleaner or gravity table separators. Among equipment there is the continuous flowing blower that uses only a vertical air stream to perform seed cleaning. So, the aim of this study was to evaluate the continuous seed blower with vertical air stream on barley, crimson clover and wheat seeds cleaning and quality upgrading. Seed samples of each specie were prepared and moisture content determined. The samples were blown at following air velocities: 6 m.s<sup>-1</sup> to 14 m.s<sup>-1</sup> (barley), 8 m.s<sup>-1</sup> to 13 m.s<sup>-1</sup> (crimson clover) and 8 m.s<sup>-1</sup> to 13 m.s<sup>-1</sup> (wheat), in 1 m.s<sup>-1</sup> intervals. Physical purity, the thousand seed weight and the physiological quality (germination and vigor) were quantified. It was conclude that: 1 - it is possible to cleaning barley, crimson clover and wheat seeds and quality upgrading seed lots in a continuous flowing blower with vertical airstream; 2 - the air velocity 9, 10 and 11 m.s<sup>-1</sup> where adequate to cleaning and quality upgrading barley, crimson clover and wheat seeds, respectively in the continuous flowing blower, considering seed physical purity, germination and vigor and acceptable seed discharge percentage; 3 - there is an horizontal air velocity gradient in the continuous flowing blower plastic tube; 4 - the voltage affect the air velocity in the plastic tube at low fan velocities in the continuous flowing blower with vertical airstream.

**Keywords:** *Hordeum vulgare*, *Trifolium incarnatum*, *Triticum aestivum*, terminal velocity, physical quality, physiological quality