**Low dose precision distribution with micro-granules fertilizer using different spreader machines**

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**Abstract.** This paper is the first of a series of works devoted to the general issues of organic fertilizer spreading machines.

In any agricultural and horticultural crop, the rapid development of a strong root system is a fundamental condition for fully expressing the productive potential; this is due to a better exploration of the soil by the roots and to the formation of more vigorous reproductive structures. The distribution of trace elements and a targeted amount of nitrogen are an important factor in this process. Furthermore, nitrogen fertilizers play a fundamental role in the development and growth of the plant. Their importance is relevant since nitrogen is a basic component in the formation of plant tissue cells. It also influences the metabolism of the plant, entering the formation of substances such as amino acids and enzymes, as well as a large number of hormones and vitamins.

With reference to mineral fertilization, it can be carried out with fertilizer spreaders with localized distribution on the row using "pneumatic systems and machines with release systems for fertilizers in the form of micro-granules" or by broadcasting using, among the numerous types on the market, machines for “centrifugal” drive for open field crops.

The objective of the experimental test was to analyze the distribution in the field (with variable dosages of fertilizer from 5 to 20 kg / ha) of a mineral fertilizer that comes in two different production types - micro-granules and cylindrical tablets.

For this purpose, three types of fertilizer spreading machines were used. A precision fertilizer spreader, equipped with microgranulator, from Kverneland and two solid fertilizer spreaders from Kverneland and Amazone respectively.

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