

# Do we need a new application equipment for application of “biorationals”?

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The quality of application plays a major role in all cases, whether they are pesticides, fertilizers or other products and resources, including biorationals. The use of application equipment must be safe, effective and accurate in all areas of pest control and for use of all products. Biorationals, it is a concept that affects a very wide range of products and preparations. Microorganisms, plant extracts, basic substances, semiochemicals, as well as non-pesticidal products like biostimulants, biological yield enhancers, plant health promoters, and soil conditioners - this is a brief list of products representatives that are included under the name „biorationals“. Their application is also a broad concept, some of them can be applied in a common way (spraying), other equipments require more or less attention.

The critical point using biorationals is that they are deemed to have low effectiveness. Can the right application technology supports their use, avoids losses and finds the target precisely? We find approx. 30% differences in dose and application effectiveness between the different equipment types, which depend not only on technology, but also on the way of application and conditions (meteorological conditions, etc.). Other risks may be a losses due to drift; a quality of the carrier medium (e.g. for pesticides, mostly water must be clean and its inappropriate characteristics may affect their effectiveness too); a quality of the application equipment and some of its components may also affect the application and its outcome. The application machinery currently placed on the market is designed especially for all kinds of pesticides application. Horizontal boom sprayers, orchard sprayers, hand-operated equipment, fixed and semi-mobile equipment, dusters, applicators of granulates and many others. These machinery must follow the requirements of international standards, which are focused on the design and operation of that machinery especially for pesticides application.

Do we need new application equipment for applying biorationals? Probably not for common applications but we will need to consider these issues when using certain products: suitable nozzles, adapted filtration system or agitation of liquid in the tank and etc. There will need to be discussed new requirements for some other devices that are not commonly used for pesticide application (inoculation, dressing, spreading, etc.) and find a solution for biorationals application.

## **References**

Anonymous: ISO 16 119-1: 2013 Agricultural and forestry machinery - Environmental requirements for sprayers, Part 1. General requirements