Do we need new application equipment for application of „biorationals“?

Efficacy and risks of biorational products in IPM strategies - acceptable?
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“Biorationals“

• “biorationals“ - a concept that affects a very wide range of products and preparations, the application is also a broad concept in this case,

• Microorganism, plant extracts, basic substances, semiochemicals, as well as non-pesticidal products like biostimulants, biological yield enhancers, plant health promoters, and soil conditioners,…

• some can be applied in a common way (spraying), others require attention
“Biorationals“

• The critical point using „biorationals“ is that, they are deemed to have low effectiveness.
• How can the right application technology can support their use, avoid losses and find the target precisely?

• Between the different equipment types we find approx. 30% differences in dose and application effectiveness.

• the quality of the carrier medium (e.g. for pesticides, mostly water - must be clean and its inappropriate characteristics may affect their effectiveness)

• Do we need new application equipment for applying „biorationals?“
Application equipment

• 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 techniques must be safe, effective and accurate in all areas of pest control and for use of all products.
Application equipment-questions

What about drift
What about nozzles: standard, antidrift, other, what is a solution for some bioproducts?
What about filtration:
What about mixing (agitation) of liquid, .......if spraying?
Incorrect use, settings, calibration, maintenance and control = increasing risks and losses, reduction of effects of products
Appl. of “Biorationals“

• Application equip. = spraying, manual application, aerial application, UAE application, seed treatment, many others....

• Pesticides application equipment = ISO EN standards (sprayers - 16119, 19934, 16122,....) only for pesticides (chemicals) application!!

• Spreaders – fertilizers application, basic requirements, equipment in use - no inspection
ESTIMATION OF SPRAY LOSSES IN ARBOREAL CROPS

(%) of applied

Evaporation losses (4 - 6%)

Drift losses in atmosphere and over the target (8 - 15%)

Ground losses (10 - 60%)
(They can originate run-off)

Useful for biological scopes (19 - 56%)
DROPLET SIZE INFLUENCES THE NUMBER OF AVAILABLE DROPLETS
Non-chemical products-CZ

• Non chemical products = biocontrol, physical, mechanical methods,....
• support from the officials
  - registration/authorization of bioproducts - without some fees
  - promotion through IPM, risks mitigation, replacement of pesticides by non-chemical products, ecofarming
  - subsidy amounting of 50% for purchase of some products is discussed

  no discussion about their application

Example: Consumption of product XX: kg/year – 140 kg = 1 400 ha (savings cca 1 400 l of chemical fungicides) . Tank-mix with herbicides, insecticides and fertilizers - is it OK?
Thank you for your attention