

# 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

Drift reduction



application



# 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

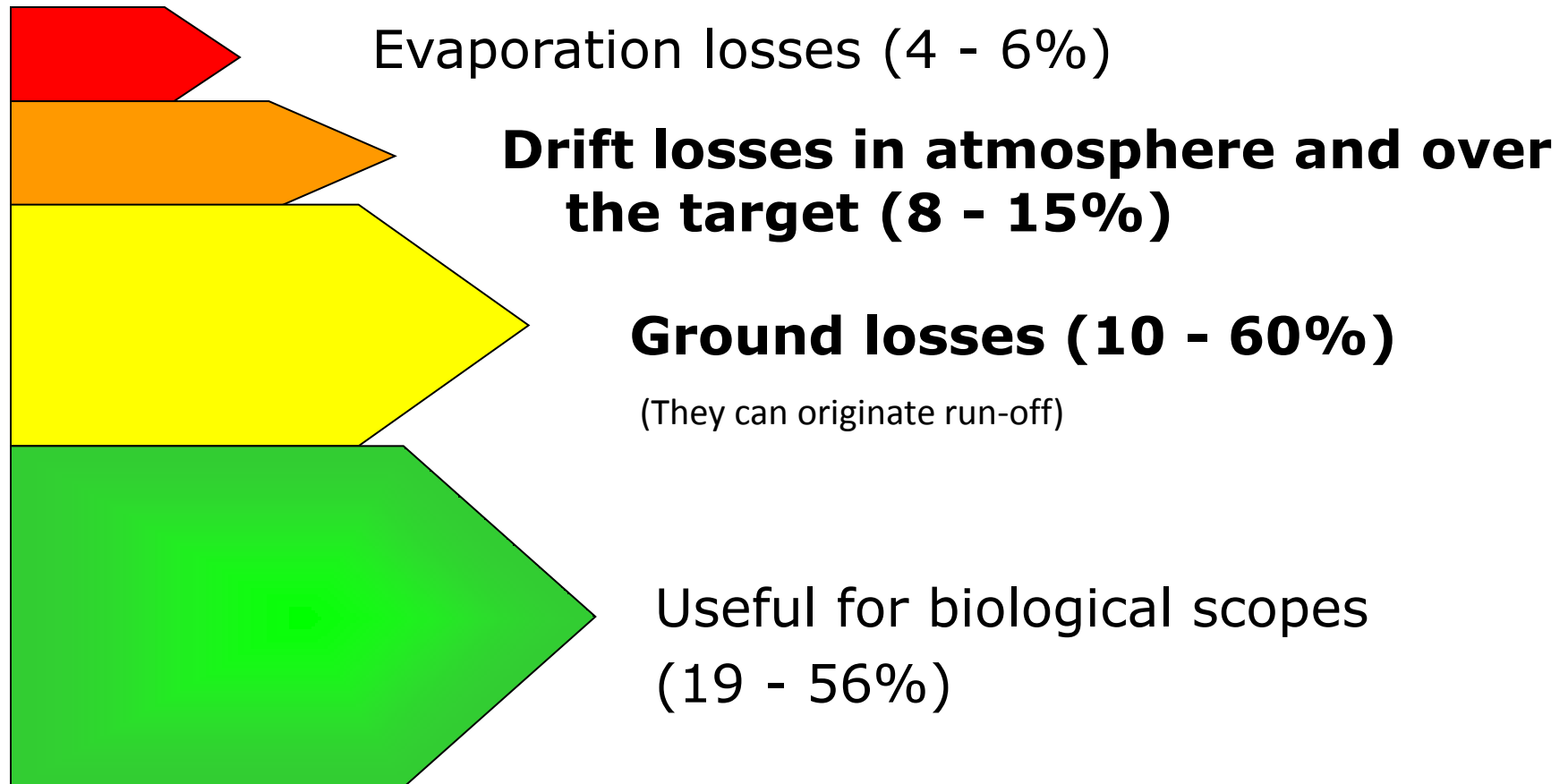


# Appl. of “Biorationals”

- 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

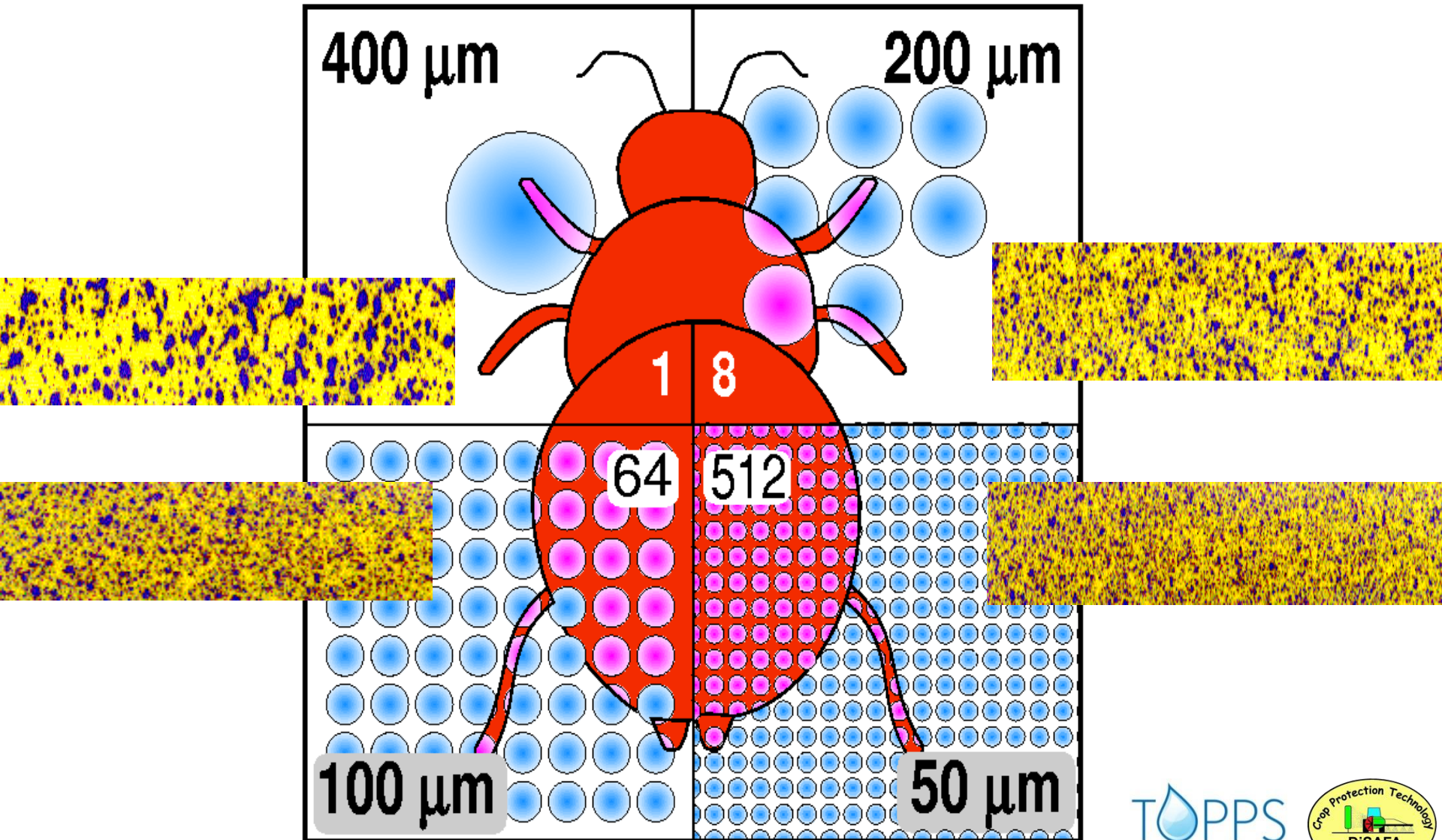
# ESTIMATION OF SPRAY LOSSES IN ARBOREAL CROPS

(% of applied)





# 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**