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Targeted application, Spray Technology and Authorisation; Short communication and Workshop feedback. WICC Wageningen, 10-11 May 2023

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Aim of the workshop

Recent developments of pesticide application technology are in the fields of precision spraying, precise targeting, variable rate application, spot spraying, and improved sprayer efficiency resulting in increased on-target spray deposit and biological efficacy.

These new spray technology developments generally use lower doses of pesticides and can therefore, be of influence on spray drift, ground deposition in the field and on the residue levels in food and other products, as well as reducing negative environmental effects.

The adjusted dose of pesticides used with these techniques and their localised application e.g. task-map based, and spot spray applications result in a lower amount of pesticide applied to the field and a non-homogenous distribution in the field, considering the heterogeneity of the intended target, which is at the moment not addressed in the authorization procedure of pesticides.

This workshop brought together practical experience, scientific knowledge and regulators insights and methodologies to address the potential use of precision application technology in the pesticide authorization procedure.

The workshop

More than 80 people attended the event in Wageningen (NL), which pleasingly was more popular than originally expected. Attendees were mainly from Europe (Netherlands (30%), Germany (20%), France (<5%), UK, Belgium, Switzerland, but also included representatives from North- and South America and Africa. Most of the attendees came from agrochemical industry (50%), research (30%), spray equipment industry (10%) and public bodies (5%).

The presentations were roughly divided in the following sessions: Practice and research, Arable crops, Tree & bush crops, and New technologies & developments. Due to the regular time slots for discussion in the Workshop programme, a lively debate developed about the needs, drawbacks, short comings, and opportunities of Precision Application Technology (PAT) and how to move forward to a special status of the technology to be used in practice. In general, it was concluded that the Workshop was successful and needs a follow-up in the near future.

Results, conclusions and recommendations from the workshop

The following results, conclusions and recommendations were drawn at the workshop and presented and discussed at the end of the workshop.

- PAT definitions are available; see Precision Agriculture and Crop Protection (wur.nl)
- Subject of the WS has its interest; needs a follow up? - yes
- Technically everything is possible, but we need to consider to 'degree of adoption of technology',
- we need to merge technology with regulatory and training aspects. Topics as Risk mitigation, dose expression, environmental requirements should be reviewed again
- Important to guarantee a minimum optimal educative level. CAP already include mandatory training; e.g.: BTSF ACADEMY (europa.eu)
- Mandatory training programs at EC should be reviewed and implemented with technologies
- Big differences exist between PAT used in field crops and orchards. The most important amount of PPP is applied on 3D crops. High efforts to promote and disseminate new technology in this sector are needed

Precision application technology:

- First improvement of efficiency of the spray process; increase deposit at the target -> use reduction /increased efficacy
- Apply only there where needed
- If possible, adapt dose based on available info (based on what?)

- Can PAT be used in regulation? This WS does not (yet) make clear how?
- Needs: classification of sprayers. But classification of what?
- Functionality?
- PPP-use reduction? (example supplied by Jean-Paul Douzals: www.performancepulve.fr)
- Change in target deposition?
- Change in ground deposition?
- What information is needed?
- Need for harmonisation is often mentioned; but harmonisation of what?
- Or do we mean exchangeability of DRT classified techniques in different EU-MS

- To bring the process further there is a need for use cases to demonstrate the needs and possibilities, questions that are to be fulfilled and those who are still open
- Suggestion is made to the agrochemical industry to reregister already authorised PPP relevant for use in Precision Application to widen the authorisation with potential higher number of applications during the growing season combined with reduced doses, and partially applied areas in the field; filling up the total authorised PPP amount of the original registration.
- Example: original two applications of 1 kg ha^{-1} - 2 kg allowed per season; Widened: four applications with 0.5 kg ha^{-1}, eight applications with 0.25 kg ha^{-1}

Further developments

Following another Workshop on 'Digital Agriculture and Precision Applications' held February 2023, in the meantime, another initiative was started by forming a European Precision Application Task Force (EUPAF). The main tasks of EUPAF are:

1. Identify use category describing precision uses of PPP, based on an inventory of equipment and corresponding aims of treatment (volume and drift).
2. Develop appropriate language to best describe the use category, to be used in a GAP table
3. Identify potential changes to Risk Assessment (RA) and the potential as Risk Mitigation Measures (RMM) for each use case
4. Develop adapted risk assessments for each use case
5. Prepare material to enter in the Compendium on Risk Mitigation Measures and Precision Applications of the European Commission
6. Develop equivalence tables of tool performances regarding risk reduction and use reduction.

First results of EUPAF are expected to arrive in 2024.