Industry Response to Pesticide Regulators "State of the Knowledge" Review of Unmanned Aerial Vehicle (UAV) Use for Pesticide Application

Overview of the Unmanned Aerial Pesticide Application System Task Force (UAPASTF)

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AAPCO Arlington, VA
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Global regulatory landscape of drone application technology

North America

USA: EPA defers to states provided aerial application is allowed on the federal label.

CAN: Some registered labels for drones, overall policy being developed

Latin America

BRA, CRI, URY: Drone application is allowed once aerial application is already approved on the label.

GTL, COL, MEX: Some drone application permitted. Regulation under discussion.

ECU, PER: Drone application not allowed. Regulation under discussion.

Europe, Middle East, Africa

EU: Mostly aerial application banned except with specific exemption.

DEU, CHE Drone application allowed for specific applications.

HUN: local regulation under construction.

Burkina Faso, Ghana, Kenya, Zambia, South Africa: strong interest in drone application

Asia Pacific

JPN, KOR: Most advanced countries for drone regulation; Commercial use permitted

MYS, PHL, IND: Regulations in place.

CHN, THA, IDN: Commercial use permitted while guidance is developed in parallel

PAK, VNM, MMR: Regulations under development

OECD WPP Drone/UASS Subgroup

Founded in August 2019 by the Working Party on Pesticides (WPP) to provide guidance on regulation Organisation for Economic Co-operation and Development (OECD) of use of unmanned aerial vehicles for application of crop protection products

Why is it important?

- "As a consequence of population aging and shrinkage in Asian countries like China, the trend of labor shortage for agricultural production has grown and will continue in future"
  (H. Xiongkui, et al. 2017. Int J Agric & Biol Eng 10:18-30)

- **Other potential benefits**
  - Improved operator exposure vs. handheld
  - Enabling digital / precision ag

OECD WPP Drone/UASS Subgroup

OECD Drone/UAV Subgroup of WPP

Overview of Participants

OECD BETTER POLICIES FOR BETTER LIVES | 60 YEARS

A global effort

- OECD member countries, led by the United Kingdom
- European Commission
- Business at OECD (BIAC)
- Invited Experts

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Key Steps

published on the APVMA, OECD website at :
https://apvma.gov.au/node/91741
https://www.oecd.org/officialdocuments/publicdisplaydocumen
tpdf/?cote=ENV/CBC/M
anguage=En

- Decision to start with existing data / info (Oct 2019 – Jan 2020)
- Consultant to review existing data / info write data evaluations (DERs) / overview document (June – Oct 2020)
- Information collection requests (Mar 2020 & Oct 2020)
- Subteam to work with consultant (July 2020 – Feb 2021)

WPP Approved Public Release of 'state of knowledge' Document (July 2021)

Industry sponsored task force –Task Force (UAPASTF) established

- DERs / overview document completed (Mar 2021)

- WPP Recommendation for next steps agreed - *shifting Subgroup to facilitate global development of UAV application regulations, implementing 'state of knowledge' document recommendations*
- *Work Packages in-progress*
- (July 2021 - present)

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OECD WPP Drone/UASS Subgroup

	Grouping of Recommendations from 'State of Knowledge' Report
Work Package #1 – off-site exposure including exposure modeling (BIAC / CDN / US)	**#7. Develop an empirical database and standard drift curve or model to estimate off target exposure.** **#9. Develop a useable publicly available model for predicting spray deposition and drift including parameters for static hovering, forward speed and spray equipment.**
Work Package #2 – scanning / survey to stakeholders (UK)	**#1.** Establish database to classify UASS into groups to reduce burden of testing each different platform/configuration. #2. Survey manufacturers about future trend of UASS design/ use profiles to produce a benchmark platform as a common starting point for regulators (others may differ and need custom assessment but would cover most common uses). #8. A data gathering exercise for operational practices mixing, loading, cleaning and transport scenarios.
Work Package #3 – 'best practices' guidance (BIAC)	**#5. Develop and publish a user-friendly summary of best practice (including the essential nature of calibration), pitfalls and a trouble shooting guide (both for generating trials data and applying pesticides in practice), including preliminary recommendations for operational parameters (release height, application volumes, forward speed and spray quality).** **#6. Promote the advice in Annex D recommendations for researchers conducting UASS drift studies.**
Work Package #5 – connect to ISO (Research Institute / ISO representative)	#4. Develop set of standard methodologies that will support regulatory decision making. #3. Encourage manufacturers to develop improved spray systems including the pump systems, nozzle placement and closed transfer loading systems. * ISO standard project

Unmanned Aerial Pesticide Application System Task Force (UAPASTF)

Industry sponsored task force – (UAPASTF) established

- UAPASTF global core mission is to supply regulatory data / information to inform the potential use of UAV-based pesticide application
- UAPASTF alignment with work of the OECD WPP Drone/UASS Subgroup critical to success
- UAV-based pesticide application a part of progression toward precision / digital agriculture with the potential for increasing sustainability

Unmanned Aerial Pesticide Application System Task Force (UAPASTF)

- **Based in the US - but global in its work / focus**
- **UAPASTF interacts with OECD Drone/UASS Subgroup of WPP, regional / national regulators, CropLife, & other stakeholders to develop & provide information / data**
- **UAPASTF Definitive Agreement Approved, Leadership Selected**
  - **Administrative Committee**: Greg Watson (Chair; Bayer), Travis Bui (Vice Chair; Corteva), & Becca Haynie (Treasurer; Syngenta)
  - **Technical Committee**: Frank Donaldson (Chair, BASF) & Shanique Grant (Vice Chair, Syngenta)
    - Task force managers: Rhonda Bichsel (Secretary) & Eric Bruce
- **Established collaborative agreements with UAV-application companies, seeking further agreements with other companies (e.g., additional UAV-application companies in other world areas, UAV & nozzle manufacturers)**

Industry sponsored task force – (UAPASTF) established

UAPASTF Members:
BASF Corporation
Bayer CropScience LP
Corteva Agriscience
FMC Corporation
NuFarm Americas Inc.
Syngenta Crop Protection LLC
Valent U.S.A. LLC
Gowan

Parties interested in the work of, or registrants interested in joining the UAPASTF should contact:

Dr. Greg Watson,
Chair, UAPASTF Administrative Committee
greg.watson@bayer.com /
+1 314 343 8120

Unmanned Aerial Pesticide Application System Task Force (UAPASTF)

Industry sponsored task force – (UAPASTF) established

- ***Technical teams actively working***
  - **Off-site movement GLP study protocol, 8-10 GLP field studies planned in 2023**
    - **Including identifying 'reference' / 'benchmark' UAV & spray system**
    - **Potential trial sites in North America, Latin America, Europe, Africa, & Australia being considered**
      - **Non-GLP 'dry runs' 1st Q 2023**
      - **Focus in 2023 will be in North America, Latin America, Europe. Other regions included in 2024.**
    - **Input from internationally recognized off-site movement experts sought & received**
    - **Requested review / input from OECD WPP Drone / UASS Subgroup on study protocol**

OECD Drone/UASS Subgroup of WPP
Work Package #1 – off-site exposure including exposure modeling
(BIAC / CDN / US)

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- ***Technical teams actively working***
- 'Best Practices' guidance
  - Draft completed by UAPASTF 4th Q 2023
  - OECD Cooperative Research Program funded workshop in 2023 for additional expert / stakeholder input on this guidance
    - In-person, May 23rd & 24th 2023, York, UK
    - https://www.hsl.gov.uk/health-and-safety-training-courses/crd-conference-and-workshop-applying-pesticides-using-drones
- Field Crop Residue Project – Canada
  - Supporting efforts for a funded Agriculture and AgriFood Canada project to address PMRA questions

OECD Drone/UASS Subgroup of WPP Work Package #3 – 'best practices' guidance (BIAC)

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- ***Technical teams actively working***
  - **Advancing Crop Life America project with Dr. J. Bonds, development of interim exposure estimate/model based on empirical data**
  - **Longer term: development of a mechanistic off-site exposure estimate/model for UAV-based pesticide application**
    - **Desired: establishment of a tripartite (e.g., government / academia / industry) forum for development of exposure estimates for regulatory purposes**

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Thank you!
Please reach out with any questions:

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