EPPO WG pome fruits

19th Oct 2016

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- 26 experts
- NZ 1, CZ 16, SZ 9
- Reg. Authorizies 6
- Research Institutes 5
- Industry 6
- Consultant 9

Glossary of terms

- Important to have clear definitions
- See tracking changes of glossary of terms

Measurement of parameters in the field

- TODAY
- Actual treated height
- Actual treated length
- Actual spray volume
- Actual spray concentration
- Nb of treated rows, nb of treated sides
- Conversion in /ha LWA
- Sprayer type – plus additional parameter
- Nozzle brand, type, seize and model
- Pressure at the manometer
- Description of the vertical boom (nb of nozzles, spacing of the nozzle)
- BBCH growth of the crop
- Distance between tows
- Distance in the rows

- FUTURE
- Spray of the entire canopy/ or not: exclude trunk, spray the bunch zone
- Describe the target of the protected *plant (see above)*
- Speed of travel of sprayers
- Quality and uniformity of spray coverage – *long term objective*
- Crop porosity, leaf canopy density – *long term objective*
- LAI – *long term objective*
- Maximum height of the plant, height and mid-with of the treated canopy- *see the proposed SOP or appendix EPPO 239*
- Pruning and training system – *see the proposed SOP or appendix EPPO 239*
- Arrangement in in rows: single, double or single plants/trees

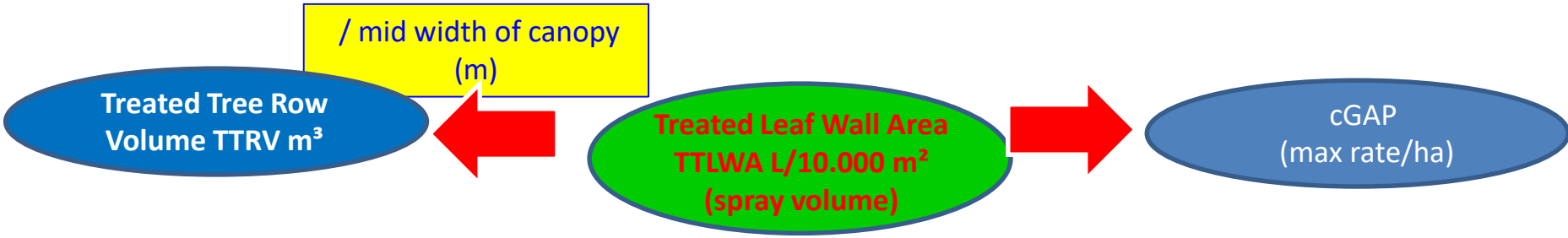
Examples of field trial reports

- How do you calculate the dose/LWA when the dose is given per ha ground?
  - **Need all parameters for perfect conversion**
- How to calculate plot size in the individual trial reports and the dose to be applied per plot? (calculation based upon dose/ha and dose/10 000 m^2 LWA)
  - **to answer this question you need treated height, the length of the plot and width of the plot**
- Does the spray volume need to be adjusted to the LWA (since it is predominantly depending on the application technique)?
  - **Two expressions: spray volume/LWA + spray volume/ha**
- Which dose expression may currently be the best choice for a harmonized European evaluation procedure for pome fruit?
  - **Recording of the parameters needed to calculate Treated LWA and recording of spray volume are allowing the delivery of all other dose expressions:**
  - **g/ha for cGAP (used in tox, fate, ecotox risk assessment)**
  - **% concentration**
  - **Recording of the parameters needed to calculate TTRV(width) could be useful for future (e.g. CH)**

Example of data reported in BAD

Country	GEP (Yes/ No)	EPPO Zone	Crop	Variety	Distance [m]		Plant Dens. [plants per ha]	CH [m]	LWA calc. [m²/ha]	Dose rate			No. of appl.	BBCH at appl.	Water Vol. [L/ha]
					W/in Row	Betw Row				[L/ha ground][1]	[L/ha LWA] (10 000 m²)	[L/ha/ m CH]			
BE	Y	Maritime	APPLE	JONAGOLD	1.5	3.5	1904	3.0	17143	2.5	1.5	0.8	9	55 - 73	300
BE	Y	Maritime	APPLE	JONAGOLD	1.5	3.5	1904	3.0	17143	2.5	1.5	0.8	12	59 - 74	300
DE	Y	Maritime	APPLE	RUBINETTE	1.5	3.5	1905	2.0	11429	2.5	2.2	1.3	11	65 - 78	500
DE	Y	Maritime	APPLE	ELSTAR	1.5	3.5	1905	2.5	14286	2.5	1.8	1.0	17	59 - 79	1250
DE	Y	Maritime	APPLE	ESTIVALE	1.0	2.0	5000	1.6	16000	2.5	1.6	1.6	6	57 - 72	800
DE	Y	Maritime	APPLE	JONAGOLD	1.0	2.0	5000	1.6	16000	2.5	1.6	1.6	7	58 - 73	800
DE	Y	Maritime	APPLE	RUBINETTE	1.0	3.5	2857	1.8	10286	2.5	2.4	1.4	8	n.a.	1500
FR	Y	Maritime	APPLE	BRAEBURN	0.8	3.0	4170	2.5	16667	2.5	1.5	1.0	10	53 - 74	500
PL	Y	North-East	APPLE	GALA MONDIAL	1.0	3.2	3125	2.4	15000	2.5	1.7	1.0	7	54 - 71	500
PL	Y	North-East	APPLE	GALA SCHNIGA	1.0	3.2	3125	2.5	15625	2.5	1.6	1.0	7	54 - 72	500
UK	Y	Maritime	APPLE	GALA	1.5	5.0	1333	2.5	10000	2.5	2.5	1.0	14	64 - 75	400
BE	Y	Maritime	APPLE	JONAGORED	1.3	3.1	2580	3.0	19355	2.5	1.3	0.8	9	56 - 73	300
BE	Y	Maritime	APPLE	GOLDEN	1.5	3.5	1904	2.7	15429	2.5	1.6	0.9	9	55 - 73	300
BE	Y	Maritime	PEAR	DURON-DEAU	1.5	3.5	1904	2.0	11429	2.5	2.2	1.3	12	59 - 78	300

Conversion between models of dose expression for new developments



Fix rate (rate/ha

Canopy height (kg ha^{-1} m^{-1})

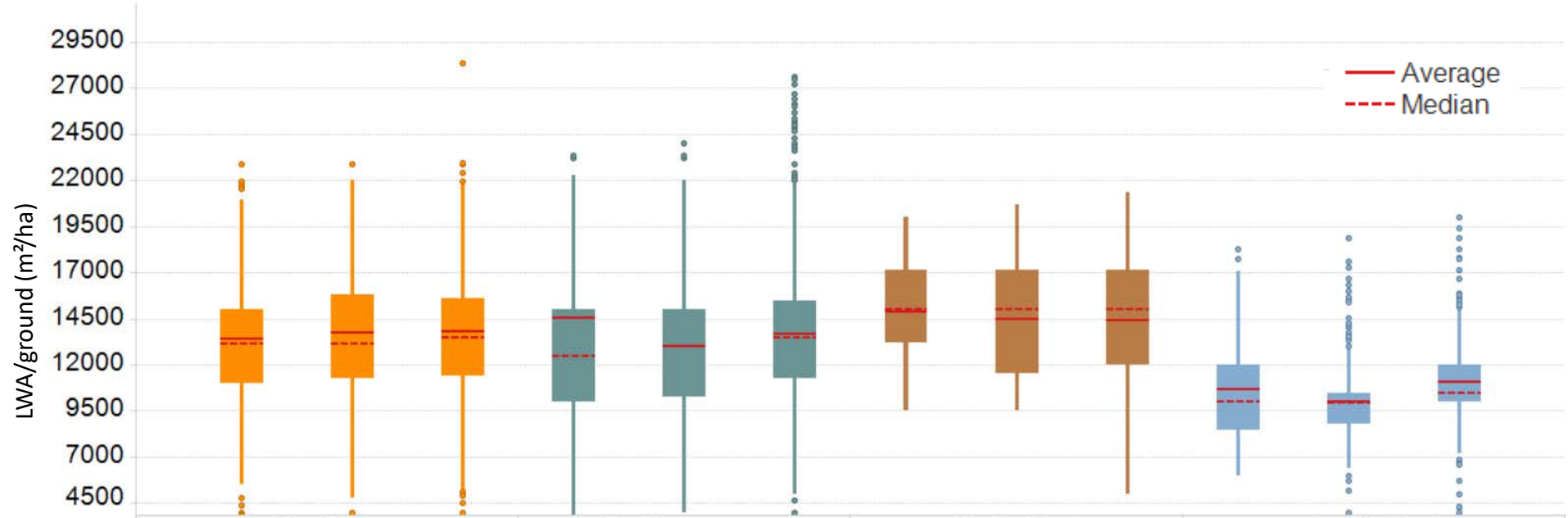
Concentration (%) (spray volume is needed

Protocols
Dev field trials
Dossier
Zonal Evaluation
Authorisation

Agreed on Conversion factors and TLWA/EPPO Zone

- Residues – max dose/ha
- Efficacy – adjust EPPO - define TLWA/Eppo Zone (Industry + Institute data)

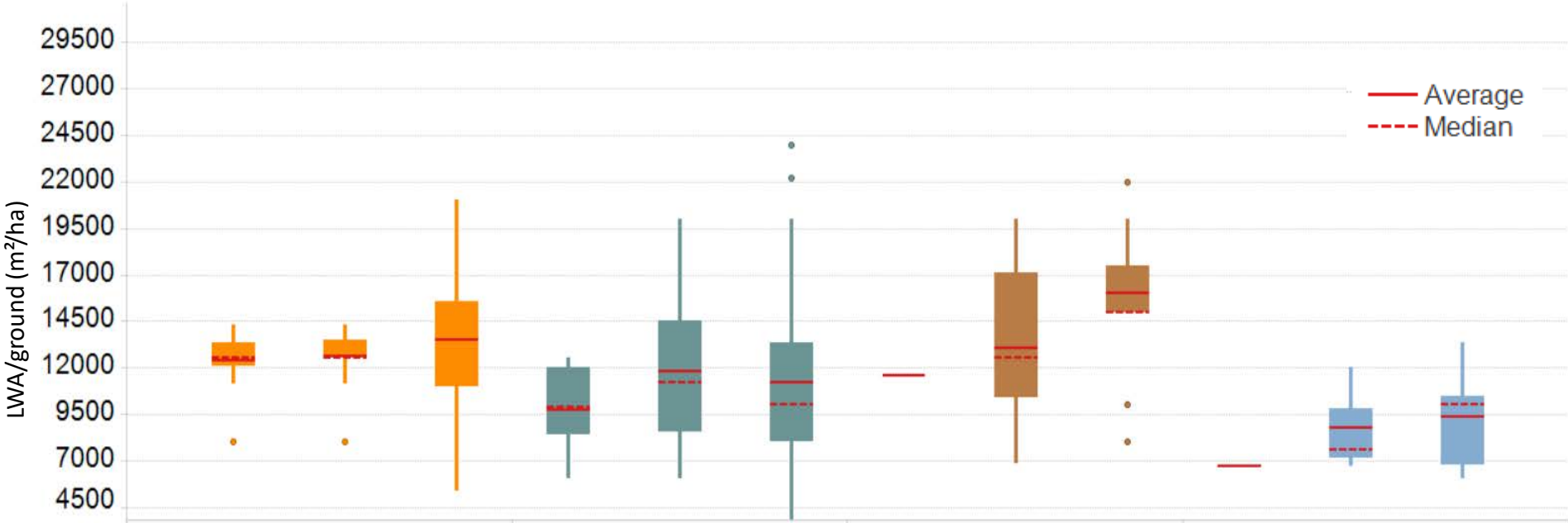
Industry Data - LWA PER EPPO ZONE and BBCH (apple & pear)



	Maritime			Mediterranean			North-East			South-East		
BBCH	<60	60-69	>70	<60	60-69	>70	<60	60-69	>70	<60	60-69	>70
Count	1117	1969	5694	380	860	3716	154	216	586	122	251	802

One data point per application, data from 2009 to 2015

Industry Data - LWA PER EPPO ZONE and BBCH (cherry & plum)



	Maritime			Mediterranean			North-East			South-East		
BBCH	<60	60-69	>70	<60	60-69	>70	<60	60-69	>70	<60	60-69	>70
Count	11	20	167	12	27	210	1	8	47	1	3	16

One data point per application, data from 2009 to 2016

Future questions

- Does the LWA approach fit to orchards with plant in double rows? **Yes**
- Does the LWA approach fit to orchards with isolated trees? **Not always**

- If harmonized approaches for crops such as pome fruits, grapevine, citrus fruits and/or vegetables are agreed is it possible to extrapolate to other crops?
- **For pome fruit to stone fruits it can be applied, but probable not the best solution. Fits for young orchards than for the old. Should be reflected while preparing the new guideline.**
-
- How should trials be assessed when “home and garden” is applied only? **When assessing home and garden only, the LWA is not relevant.**

- Would be acceptable to have more than one dose expression on your label -**yes**

Conclusion

- Agreed Glossary of terms
- Listing of parameters today and in the future
- **Agreed on dose expression in TLWA (Treated Leaf Wall Area)**with dose also expressed as rate/ha (cGAP) and following additional information is necessary:
  - Spray volume to convert to other systems

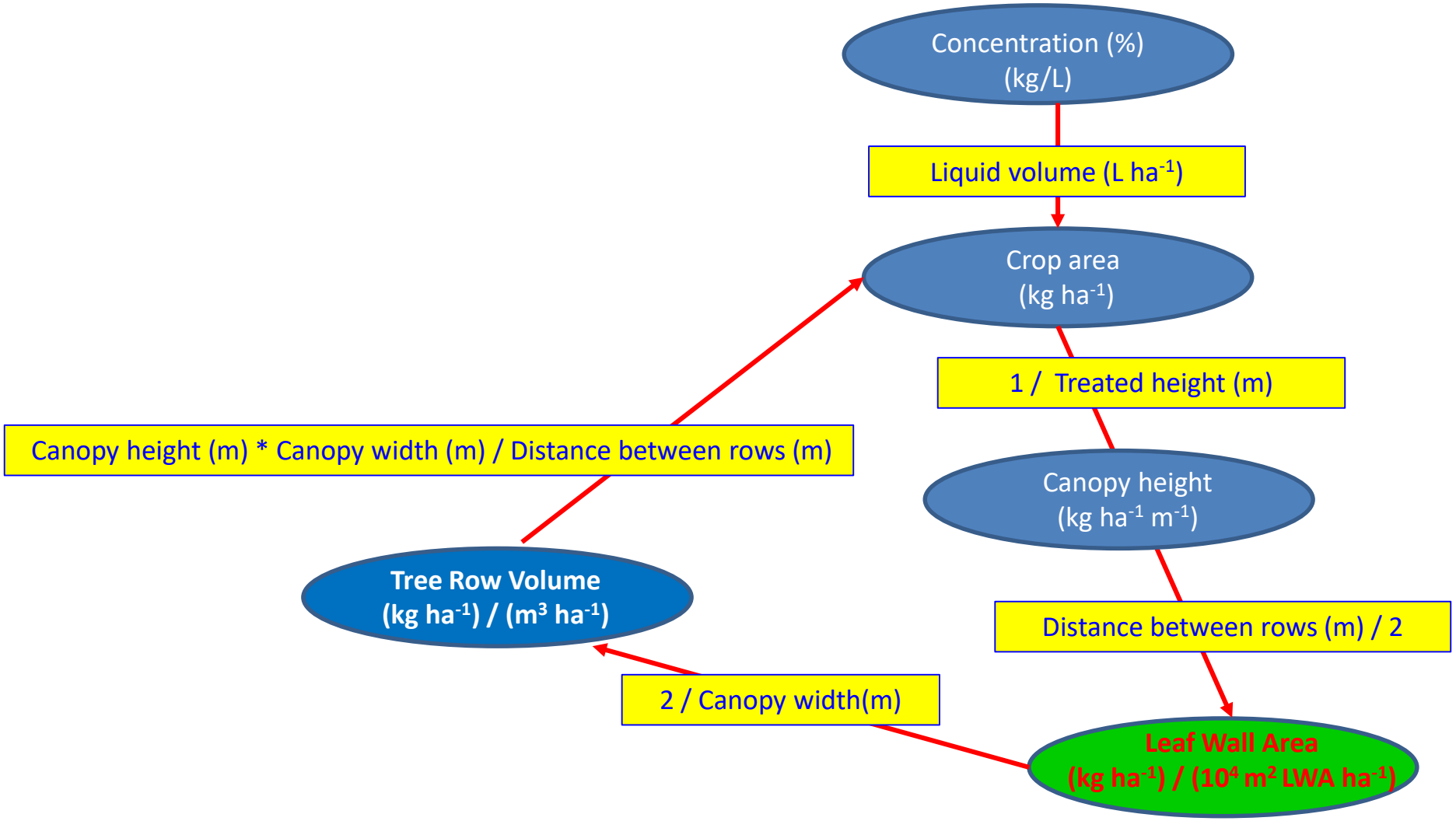
- dRR/BAD: tabular summary of presented trials is necessary. Example BASF summarized 45 trials
- Guideline to measure all type of parameter of crops

- Excell tool for conversion between different dose expression reviewed for member states post registration

Actions

- Update the glossary of terms with input of all WGs
- Include the listing of required parameters in the EPPO standard
- Establish an overview of the types of plantations/ training systems (pictures to explain how to measure the parameters) – to be added to the EPPO standard
- Make minor adaptations of the EXCEL conversions sheets (include spray volume) – CF factors are useful as post-registration adjustements
- Compile and analyse industry and research institue data in a database for dose adjustments
- Continue to collect parameters of other crops: stone fruits

Conversion between models of dose expression
For historical trials



Conversion between models of dose expression