

# Working group grapevine

1. Summary of different kinds of dose expressions mentioned in EPPO standard PP1/239(2) and presented the day before

Discuss advantages and disadvantages of dose expressions compiled in the drafted overview.

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<b>Kg or l /ha ground</b>		Not linked to any crop structure
<b>Kg or l / hl (% , ppm)</b>	Adapts to crop density by run off sprays Easy to measure	Linked to spray equipment type Needs additional information (SPV, max. dose /ha)
<b>Kg or l / m<sup>3</sup> TRV</b>		Difficult to measure width (in practice)
<b>Kg or l / ha ground and m crop height</b>	<i>not even discussed</i>	
<b>Kg or l / ha ground and LAI</b>		too complicated
<b>Kg or l / m<sup>2</sup> LWA</b>	Easy to measure Intuitive (application area)	missing density (gaps)
<b>Kg or l / 100 m row length</b>	<i>not even discussed</i>	
<b>Adjustments by BBCH stage</b>		
<b>Adjustments by crop density</b>		

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<del>Canopy Height/ Foliage Height/ Plant Foliage Height/ Height of Leafy Surface</del>	Distance from the lowest leaves to the tree/plant top, excluding the trunk area	Canopy Height
<del>Conversion Factor (CF)</del>	<del>Factor used to convert dose expressed as LWA and dose expressed per ha ground area. Conversion factors vary between crops.</del> Factor used to convert between different dose expressions.	Conversion Factor (CF)
<b>Dose conversion</b>	Conversion between dose expressions.	Dose conversion

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Dose expression</b>	Unit in which the dose is expressed. <del>The rate of plant protection product to be applied to the crop is always indicated with a specific unit (e.g. kg or L). Usually this unit is linked to the ground area (e.g. dose in kg per hectare). In high growing crops a further reference to the treated canopy height should be made.</del>	Dose expression
<b>Dose rate</b>	Measurable amount or quantity (volume or weight) of a product/active substance.	Dose rate
<b>Dose rate adjustment</b>	Adjustment of the dose rate to the specific field situation (e.g. crop, pest, application equipment...)	Dose rate adjustment

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Ground area / Ground surface</b>	Horizontal area of the field site.	Ground area
<b>High growing crops / three-dimensional crops / high crops / 3D crops</b>	<p><del>Terms for vertically grown crops such as pome fruit &amp; stone fruit (“top fruit”), cane and bush berry fruit (e.g. raspberry, blackberry, currants, etc.), grapevine, hop, citrus fruit, nut fruit, olives, but also vegetables (i.e. tomato, pepper, aubergine, cucumber) vertically grown in green houses.</del></p> <p>Take the EPPO definition with e.g at the beginning of the crop list and add that these crops are usually sprayed vertically;</p>	<b>High growing crops</b>

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Leaf Area Index (LAI)</b>	<p><del>Sometimes confused with LWA. However, The LAI is a dimensionless value indicating the leaf area (one side of the leaves) of a plant per a specific ground area. E.g. a LAI of 4 indicates that the area of green leaves is 4 times the ground area, i.e. a specific canopy above 1 m<sup>2</sup> ground has 4 m<sup>2</sup> leaves.</del></p>	Leaf Area Index (LAI)
<b>Leaf Wall Application Area (LWAA); Treated Leaf Wall Area (TLWA)</b>	<p><del>Application area at the leaf wall. This area may be larger or smaller than the LWA.</del></p> <p><del>Term used to describe the application area which is actually receiving a treatment, excluding parts not reached/covered by the application equipment.</del></p> <p>Calculated <b>from spray band height: Treated Canopy Height</b> and Row Length or Row Spacing:</p> <p>TLWA (in m<sup>2</sup> per 10 000 m<sup>2</sup> ground area) = spray band height x 2 x (10 000/ row spacing)</p>	Treated Leaf Wall Area (TLWA)
<b>Leaf Wall Area (LWA)</b>	<p><del>Term used to describe the crop. The leaf wall area is the area of the outer canopy surface indicated in m<sup>2</sup>.</del></p> <p>Area of the Canopy Leaf Wall, calculated using canopy height and row length or row spacing:</p> <p>LWA (in m<sup>2</sup>/ 10.000 m<sup>2</sup> ground area) = canopy height x 2 x (10 000 / <del>row length or row spacing</del>)</p>	<i>Leaf Wall Area (LWA)</i>

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Plant width, Tree width, Foliage width, Mid-width of the crown-crop</b>	Maximum distance between outer leaves of the tree/plant measured at the middle of the treated canopy height at time of application  or  calculated based on $(\text{minimum} + \text{maximum width})/2$ .	Mid-width of the crop
<b>Row length</b>	Sum of Length of all rows treated, Distance from start to end of spray	Row length
<b>Row sides applied</b>	One-sided (only treated on one side) or two-sided (both sides treated)	Row sides applied

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Row spacing, Row distance, Distance between rows</b>	Distance from row to the next row, for double or triple rows distance from the middle of one double/triple row to the middle of the next double/triple row	Row Spacing
<b>Spacing within row, Plant spacing</b>	Distance from tree/plant to tree/plant within a row (middle of the stem to middle of the stem)	Spacing within row
<b>Spray band</b>	The height of the sprayer output band usually indicating the treated canopy height. The output band height <b>may be higher or</b> lower than the actual canopy height.	Spray band
<b>Tree Height</b>	Distance from the soil to the top of the plant.	Plant Height

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## 2a. Glossary of terms

Existing terms	Definitions (to be agreed)	Proposal for harmonized terms
<b>Treated Foliage Height</b> -	Part of the <del>Canopy Height</del> which is actually receiving a treatment, excluding the untreated parts of the plants/trees <i>No longer necessary</i>	<del>Treated</del> <del>Canopy Height</del> (Spray Band Height) -
<b>Tree Row Volume (TRV), Tree Crop Row Volume</b>	Is a canopy volume. Method for determining the dose of plant protection product to apply per 10 000 m <sup>2</sup> considering the volume of treated canopy. <del>TRV = m<sup>3</sup>/10 000 m<sup>2</sup> = (treated canopy height or spray band) x (mid-width of the crown) x (10 000 m<sup>2</sup>/row spacing)</del> <del>Or TLWA (treated canopy height or spray band) x mid-width of the crown</del>	Tree Row Volume (TRV)
<b>Treated Tree Row Volume (TRV)</b>	<b>Is the treated canopy volume</b> <b>TTRV = m<sup>3</sup>/10 000 m<sup>2</sup> = (spray band height) x (mid-width of the crown) x (10 000 m<sup>2</sup>/row spacing)</b>	Treated Tree Row Volume (TRV)

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## 2b. Measurement of parameters in the field

1. An SOP will be provided by the industry.
2. It then will be distributed to all participants for comments (End of 2016).
3. A key group: Toews, Körschenhaus, Cuesta, Kovacs will review the comments.
4. The key group also considers the sample size (if relevant for a specific parameter).
5. The draft proposal will be provided to the General Panel thereafter (February 2017); to be submitted to the working party in May 2017.

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## 3. Let's "play" efficacy evaluation

Dummy results table (generated from a current data set) was shown and discussed.

It was decided that a subgroup is established to work on examples for conversion of LWA to local label expressions. Conclusions will be circulated for commenting within this working group. Comments will be received and valued by the subgroup.

**Subgroup:** Meier-Runge (ECPA), Prates (PT), Codis (FR). Further efficacy evaluators from SP, IT and the Central zone are wanted.

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## 5. Overall conclusions

1. Dose in kg or L/ha ground is not sufficient
2. In single trials dose of plant protection products and of the spray volume should be linked to LWA
3. We agreed that any step forward to consider the crop structure is an improvement.
4. It is agreed that the LWA is an appropriate dose expression for grapevine in zonal efficacy evaluation. The registration report should contain a proposal for the recalculation to national dose expressions.
5. A subgroup is established to work on examples for conversion of LWA to local label expressions. Conclusions will be circulated for commenting within this workinggroup. Comments will be received and valued by the subgroup. Meier-Runge (ECPA), Prates (PT), Codis (FR), ....(SP, IT..) central zone;
6. The establishment of conversion factors should be solved on national level. Industry will provide some data if possible.