



Farm Specific Adjustment of the Air Distribution of Sprayers for 3D-Crops

Record Sheet of Orchard Data for Input at www.aircheck.eu

Farm		Date				
Combination*	Information for your Overview	Mandatory parameters		Data for special orchard designs (Terrace, slope, V-System, hedge, flat canopy, spheric canopy)		
	e. g. name, variety, location, training system Please note: This column is only for your overview! Information that can be used for identification and localisation of orchards as name, geo location, field number, orchard code, acreage, variety, owner, etc. are not required for air distribution adjustment at www.aircheck.eu and can consequently not be typed in!	Row distance	Tree height**	Max. vertical difference between upper and lower tree row left and right of one alley way	Terrace	Slope (perpendicular)
		m	m	m	m	m
Example	Behind the barn / McIntosh / hedge row	4,50	3,2		0,5	0,4
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* = All combinations (= orchards) that have identical values for row distance, tree height and eventually also the data of the special cases, need to be typed in only once!
 ** = Tree height corresponds to the height from the orchard floor to the tip of the shoots at the top of the tree!
 *** = From flat canopies and spheric canopies, tree height is equivalent to the height of the max canopy width and therefore needs to be measured from the ground to this height!
 **** = A protrusion at the top of the tree needs to be measured and recorded in case it is larger than approx 5% (=1/20) of the row distance!



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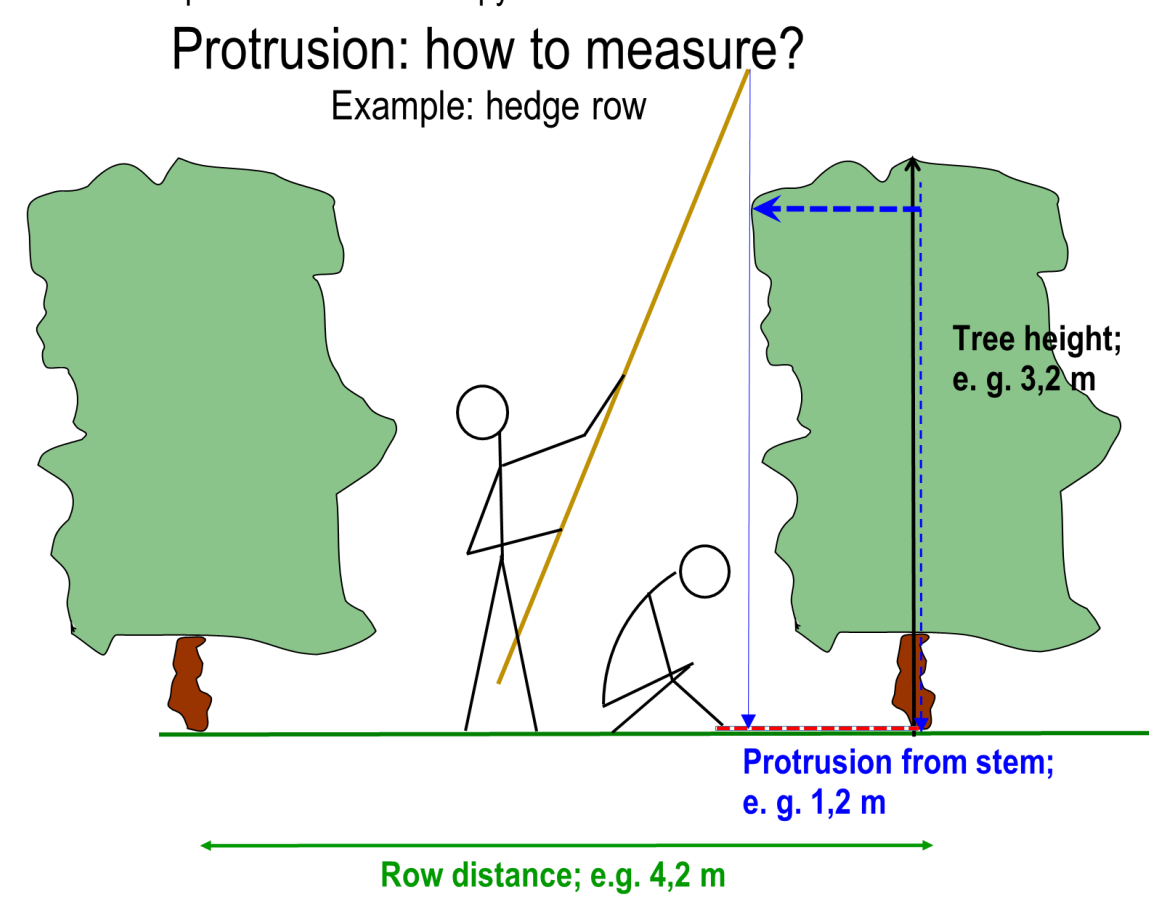
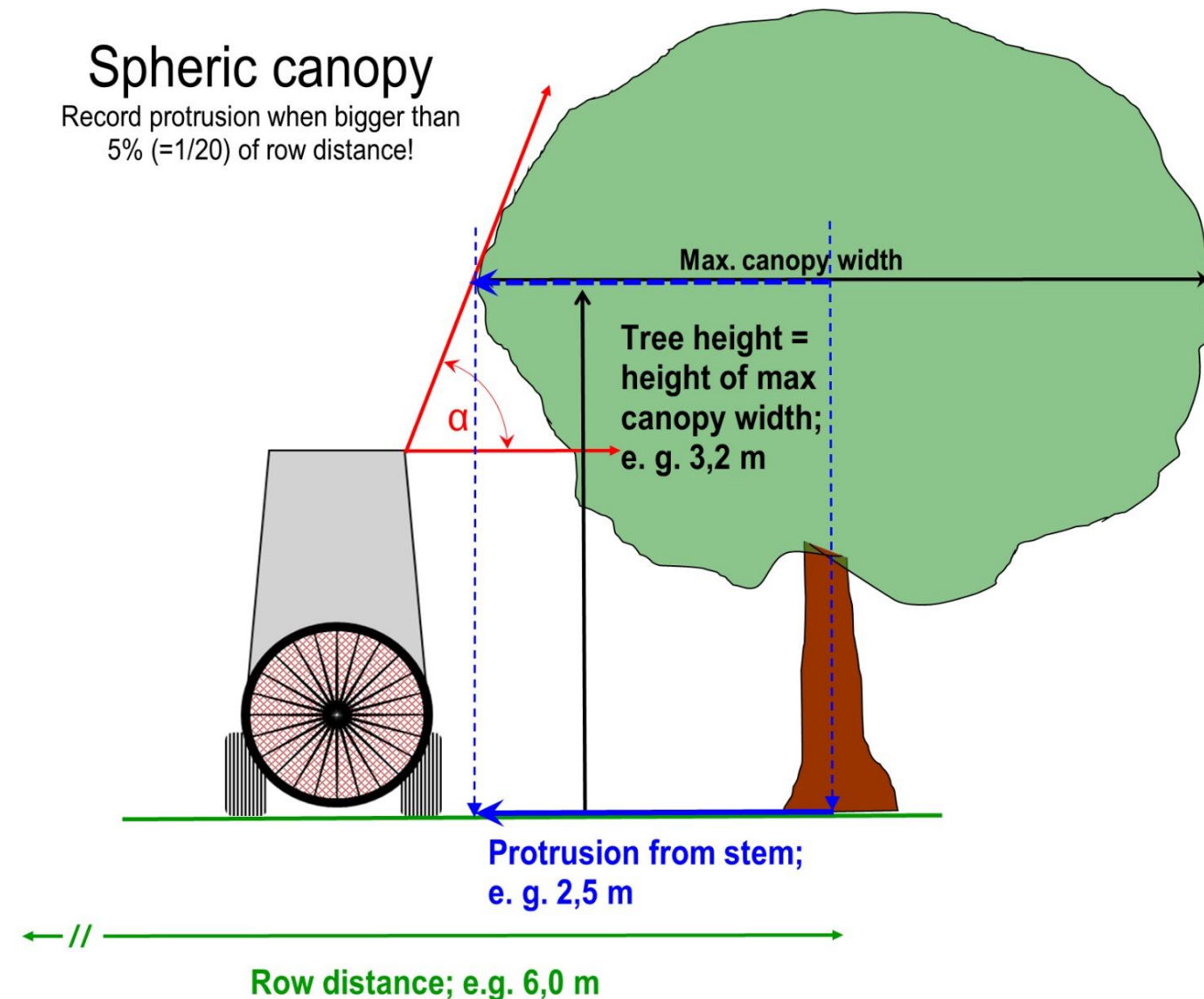
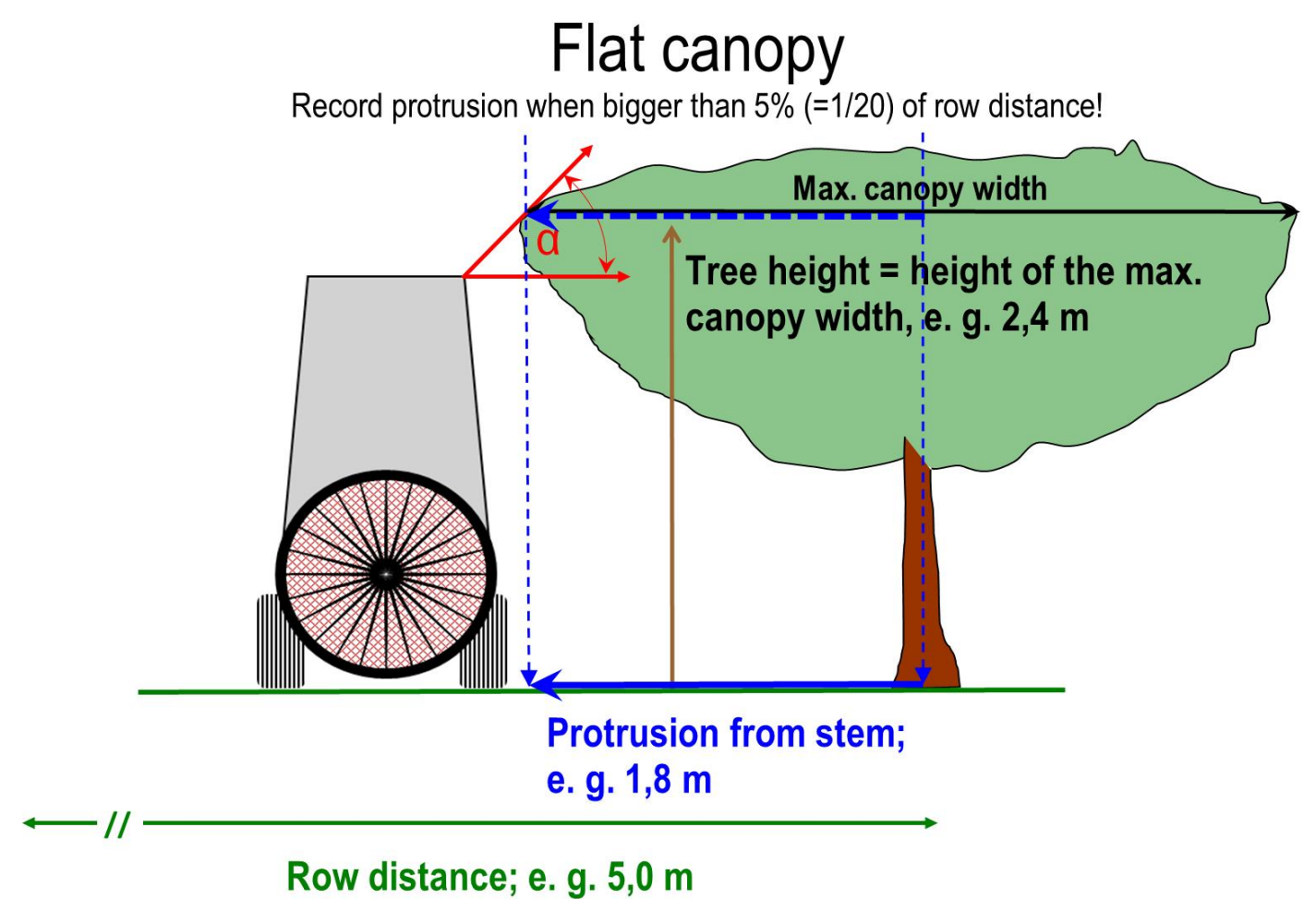
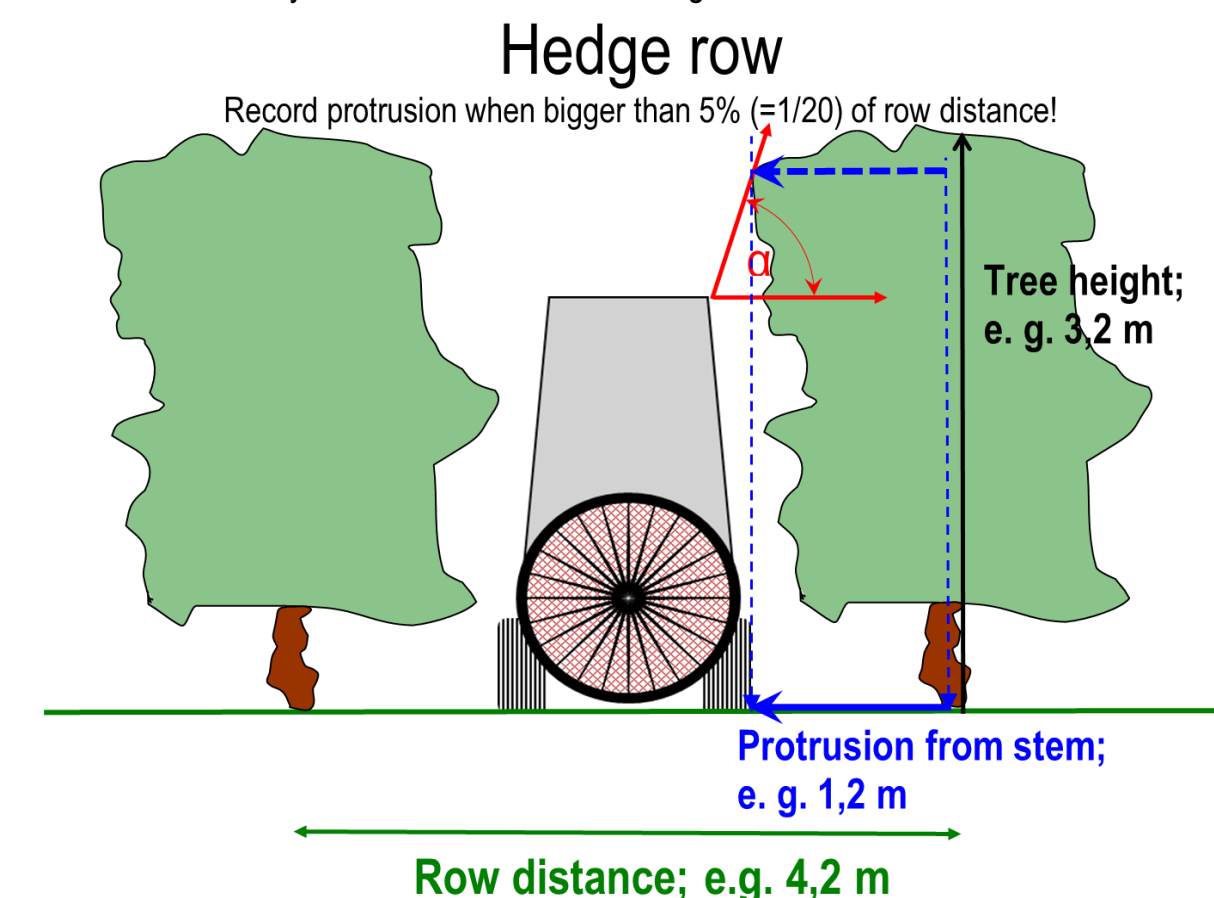
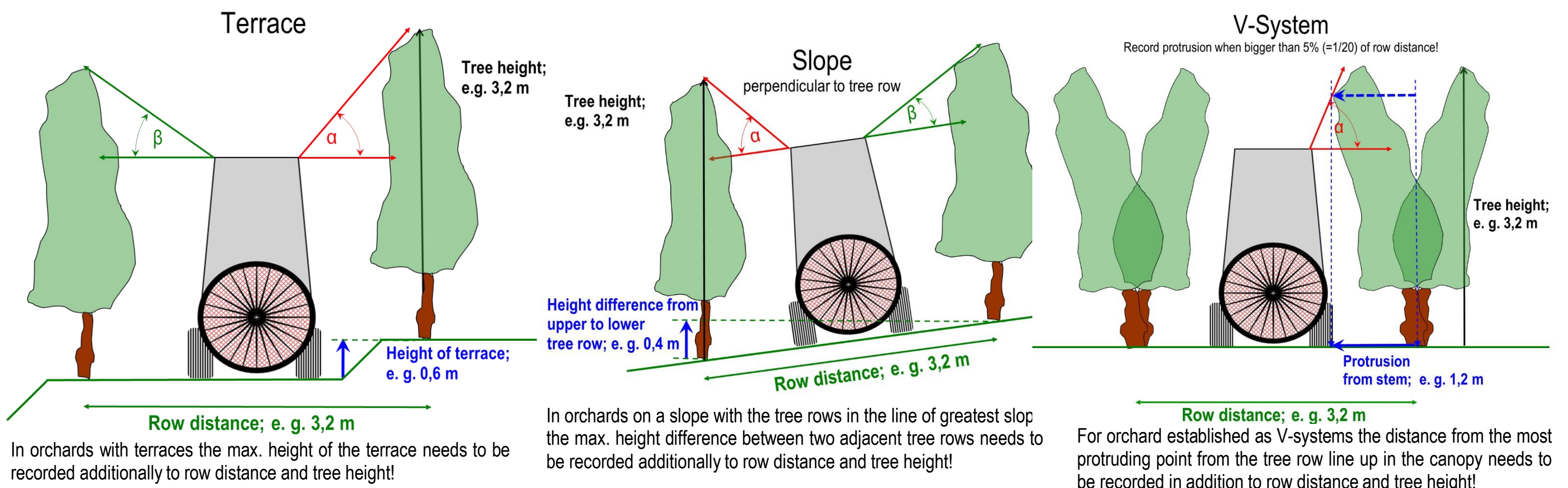
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Assessment of data from special orchard designs

For finding the best suited fan type and enable the correct adjustment of air and liquid vertical distributions to the orchards to be sprayed at your operation, data that affect the angle of the air flow in order to completely spray every orchard design of the operation, are required. Anyhow orchard designs that are identical in several orchards of the operation and also do not vary by one or more of the special cases, need to be recorded at www.aircheck.eu just once. Also a certain order of the orchards is not required.

On almost flat land the actual canopy design of a slim spindle or even super spindle as in vine growing with its slim canopies and limited height is sufficiently characterized by the recording of row distance and plant height (= from the orchard floor to the top of the plant).

Terraces or more slopy terrain and special training systems as e.g. V-systems in pome fruit or hedge rows in stone fruit require the assessment of one or two additional parameters, because these special cases increase the required vertical angle of the air flow and therefore - if unconsidered - may result in incomplete coverage of structures in the upper part of the canopy, very likely resulting in serious attack of pests and diseases. These special cases include height differences from tree row to tree row in terraces and slopes but also the protrusion of canopy structures in high and broad canopy systems as in stone fruit into the alley way. Canopy width does not need to be measured for adjusting the air distribution, because this parameter is addressed at spray application by forward speed and fan speed. The following graphs should enlighten the assessment of these eventually additionally required parameters - **printed in blue**. If applicable, please trim your trees a bit, so that no shoots and suckers are protruding far into the alley way!



Also in orchards with spheric canopies tree height needs to be recorded at max canopy width, because canopy parts above that height may be reached by the spray mist only through the canopy at an again lower angle of the air flow. The protrusion of the canopy from the stem needs to be recorded at the point of the max canopy width.

To obtain the protrusion of a canopy into the alley way one person holds a pole with a plummet mounted at a long enough string to the outer most edge of the hedge row (ev. also in between two trees), V-System, flat or spheric canopy. A second person measures the distance from the tree row to the plummet.

In case of doubt please consult your extension service for spray application!