

Hops Sampling & Growth Stages

Timing: Begin sampling at stage 1.2 (early growth)

Sample volume: Early growth stages 75–100 petioles, 50 petioles as the hops mature. (From stage 5 onwards)

Sampling: Collect the youngest fully expanded leaf (YFEL). As the vine matures select the pair of leaves closest to the main bine from laterals about head height. Sampling laterals doesn't accurately reflect the crops nutrient trend for NO₃ (usually too high). Use N-check soil sampling for N availability. Discard leaf blades, retain petioles for analysis

Primary Stage	Secondary Stage	Description	Comments
1			<i>Leaf Development</i>
	1.2	Early growth	2nd pair of leaves unfolded (beginning of twining)
3			<i>Elongation of Bines</i>
	3.1	Half way to wire	Bines have reached 10% of top wire height
	3.5		Bines have reached 50% of top wire height
	3.8		Plants have reached the top wire
	3.9		End of bine growth
5			<i>Inflorescence Emergence</i>
	5.1		Inflorescence buds visible
	5.5		Inflorescence buds enlarged
6			<i>Flowering</i>
	6.1	Flowering	Beginning of flowering: about 10% of flowers open
	6.5		Full flowering: about 50% of flowers open
	6.9		End of flowering
7			<i>Development of Cones</i>
	7.1	Early cone formation	Beginning of cone development: about 10% of inflorescences are cones
	7.5		Cone development half way: all cones visible, cones soft, stigmas still present
	7.9		Cone development complete: nearly all cones have reached full size
8			<i>Maturity of Cones</i>
	8.1	Mature of crop	Beginning of maturity: 10% of cones are compact
	8.5		Advanced maturity: 50% of cones are compact
	8.9		Cones are ripe for picking: cones closed; lupulin golden; aroma potential fully developed

Growth Stage numbering system is in accordance to the extended BBCH, a uniform coding of phenologically similar growth stages for all plant species

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