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Plant phenology is the development of a plant over time, also referred to as “growth stages.” Plants develop reliably in response to temperature and sunlight. Properly identifying the phenological stage of your wild blueberry plants is critical for timely and therefore successful integrated pest management (IPM), placement of beehives, fruit set monitoring, foliar nutrient sampling and knowing when to harvest.

Wild blueberry is a very diverse crop with hundreds to thousands of genetically distinct plants in each field. These plants reach different phenological development stages at different times. We consider a field to have reached a particular stage when more than 70% of the field has reached this stage.

Research into the timing of phenological stages in wild blueberry is ongoing. In 2020, it was clear that wild blueberry experienced some vegetative stages in quick succession (perhaps less than a week) with other stages requiring more time to develop (2+ weeks). Further understanding into the seasonal timing of these stages will improve our ability to model and predict the growth of wild blueberry relative to local weather (growing degree days, GDD) aiding in day-to-day on farm management decisions.

PRUNE	Leaf Emergence Stages			Tip Die Back	Bud Development		Leaf Drop & Bud Hardening
							
	Early Green Tip (V1): Spikey green tissue emerges from tightly closed buds along stem (spikes < 2mm).	Green Tip (V2 & V3): Green tissue continues to emerge (V2; spikes 2-5mm), and tips begin to separate (V3; spikes >5mm).	Shoot Expansion (V4): Leaf shoots expand, leaves unfurl, and enlarge in a whorled pattern.	Tip Die Back: As the plant transitions from vegetative growth to reproductive growth (budding) the upper-most leaf will curl, dimple and eventually die/drop.	Bud Initiation: Small pointed green buds appear at upper leaf joints.	Scale Development: Buds become larger and rounded with reddish tint. Bud scales become more prominent.	Leaf Drop: As the plant transitions to storing nutrients for winter, leaves turn red and drop naturally. Premature drop disease may occur. Bud Hardening: Buds change green to red to solid brown as they harden.

CROP	Leaf Emergence Stages			Bud Stages			
							
	Early Green Tip (V1): Spikey green tissue emerges from tightly closed buds along stem (spikes < 2mm).	Green Tip (V2 & V3): Green tissue continues to emerge (V2; spikes 2-5mm), and tips begin to separate (V3; spikes >5mm).	Shoot Expansion (V4): Leaf shoots expand, leaves unfurl, and enlarge in a whorled pattern.	Bud Swell (T1): Buds continue to swell with scales separating. Flower parts start to round inside bud.	Early Bud Burst (T2): Buds continue to swell with scales separating. Scale tips are pointed.	Bud Burst (T3): Bud scales separate fully with to show rounding flower parts.	Tight Cluster (T4): Petals (corolla) in flower buds are visible, elongated, but remain closed.
	Bloom		Fruit Development				
							
Early Flower (T5): Pre-bloom; petals (corolla) extend beyond the green base of the bud (calyx) but remain closed.	Open Flower (Bloom): Flowers may be various shades of white to pink. Flower petals are open for pollination.	Petal Fall (Pin Head): Petals drop but the calyx and stamen remain.	Early Green Fruit: Fruit swell begins, but fruit remains hard, small, and green.	Late Green Fruit (Blushing): Green fruit begins to blush around the top but remains green where connected to the stem.	Red Fruit: Fruit is formed and turns various shades of pink and red prior to turning blue. Acid content is still high.	Blue Fruit: Fruit is ripe, sugar content is high.	

Leaf stages coincide with bud and early flower stages. Stages not shown include dormant leaf and flower buds (V0 and T0).

Stages correlate with Hildebrand, P.D., and P.G. Braun. 1991. Factors Affecting Infection of Lowbush Blueberry by Ascospores of *Monilinia Vaccinii-Corymbosi*. *Canadian Journal of Plant Pathology* 13(3): 232–240. Images taken by UMaine Extension.