

Winter vs. Spring

*What is the difference between winter and spring barley, and what the *%^&(+ is a facultative barley?*

The three growth habit classes of barley are winter, facultative and spring. A winter barley is planted in late fall and is harvested the following summer. A spring barley is planted in the spring and harvested the same summer. If you plant a winter barley in spring, it will not flower, or it will flower too late. If you plant a spring barley in the fall, it will (in many temperate environments) die from low temperature injury. A facultative barley can be planted in the spring or the fall, and it is cold-tolerant. There are three principal physiological traits involved: vernalization sensitivity, photoperiod sensitivity, and low temperature tolerance. Vernalization sensitivity means the plant needs exposure to low temperature before it can flower. Winter barleys are vernalization-sensitive whereas facultative and spring types are not. Photoperiod sensitivity means the plant will not flower until the day length reaches a critical threshold. Many winter barleys, most facultative barleys, and few spring barleys are sensitive to short days. Low temperature tolerance is an induced trait. Winter and facultative barleys are more cold tolerant than spring barleys. Since the traits are controlled by different genes our bets are on photoperiod-sensitive, cold-tolerant facultative varieties.



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ORIGINAL PAPER

Validation of the *VRN-H2/VRN-H1* epistatic model in barley reveals that intron length variation in *VRN-H1* may account for a continuum of vernalization sensitivity

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