

DNA TESTS FOR STRAWBERRY

Perpetual Flowering Bx215



Perpetual flowering strawberries have great economic value to the fresh market industry. Floral initiation in strawberry is largely determined by photoperiod, temperature, and genetics. Commercially grown strawberries are generally classified as remontant (repeated or perpetual flowering, day neutral) or short day types, determined by their photoperiod requirement for flower initiation.

Genetics of the Trait

Perpetual flowering in cultivars that originated from the "California" source, a *F. virginiana* subsp. *glauca* strawberry accession, is largely controlled by the *FaPFRU* locus. This source was collected in the Wasatch mountains of Utah in the 1950s, and the remontancy attribute was incorporated into several cultivars including 'Capitola', 'Tribute', and 'Seascape'. The Bx215 marker is located close to the *FaPFRU* locus.

Allelic Variation

The allele providing remontancy shows complete dominance. A reduction in runners also observed in remontant plants. From analysis of 15 diverse populations, ten alleles were detected for this locus. One particular allele, "Rem", is associated with remontancy.

Genotype	Example Cultivars	Trait Level
Rem Rem or Rem Non	Albion Selva Seascape Tribute Tristar	Perpetual Flowering (Day Neutral)
Non Non	Camarosa Earliglow Honeoye Jewel Puget Reliance	Mesifurane produced

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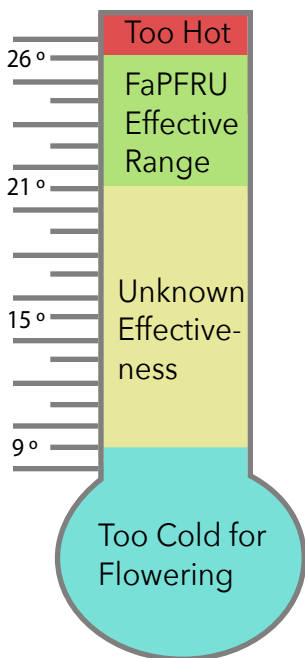


When to Assay

The Bx215 DNA test is particularly useful for choosing parental combinations leading to desired proportions of remnant (perpetually flowering) seedlings of the next generation. Where remontancy is required, this test can also be used to efficiently cull seedlings likely to be non-remnant prior to costly field planting.

Predictive Capacity

The Bx215 DNA test has over 90% accuracy in analyses of RosBREED germplasm.



Rem allele Present Rem allele Absent

Short day/
remontant

93%

7%

Perpetual
Flowering/
non-remontant

14%

86%

Technical Details

Bx215 is a simple PCR-based test consisting of a single SSR marker. For more details on this DNA test and new tests in development for strawberries or other rosaceous crops visit www.rosbreed.org/breeding/dna-testing.

RosBREED

Combining disease resistance with horticultural quality in new rosaceous cultivars



**Look For Updates:
31 DEC 2017**