DNA TESTS FOR PEACH

Peach vs. Nectarine indelG

A peach is a peach is a peach. OR is it a nectarine? A common question the public asks peach breeders and producers is: What is the difference between a peach and a nectarine? The prevalence of this question illustrates the importance of pubescence and the selection for or against "fuzz" in commercial breeding programs. Simply put, a nectarine is a fuzz-free peach.

Genetics of the Trait

The presence or absence of skin fuzz is controlled by a single locus, the *G* locus. The nectarine-type allele is recessive to the peach-type. Hidden within many peach cultivars is the genetic potential to produce nectarine offspring—because those cultivars are heterozygous. Although other attributes, such as "nectarine flavor", are found in nectarine cultivar descriptions, this may be due to selection, not genetics, as breeders are able to develop peach cultivars with the "nectarine flavor". To predict if an individual will be a nectarine or a peach and if a peach has the genenitc potential to produce nectarine offspring, the indelG DNA test was developed*.

Alleles Available

The indelG DNA test has two alleles: "P", the presence of which always results in a peach, and "n", which must be homozygous to result in a nectarine. Both alleles are common in U.S. breeding germplasm.

n|n

P|-

Genotype	Example Cultivar	Trait Level
P | P	Elberta, Contender	Peach
P | n	O'Henry, Autumnglo	Peach
n | n	All nectarine cul vars!	Nectarine

* indelG was developed by Elisa Vendramin, Laura Rossini, and colleagues

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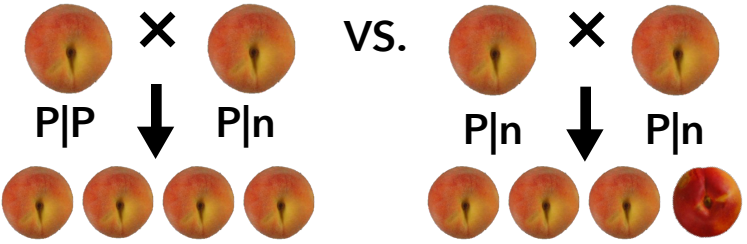
When to Assay

The indelG DNA test can be useful in parent selection for eliminating or maximizing the possibility of nectarine seedlings.

Possible outcomes of peach crosses



100% Peaches

75% Peaches & 25% nectarines

The test can also be used for seedling selection to cull unwanted nectarines or to sort nectarines into separate field plots.

Predictive Capacity

IndelG is 100% predictive. Nectarine homozygotes will always lack pubescence. Heterozygotes will always have pubescence, but can produce nectarine offspring. Peach homozygotes will always have pubescence. Confirming the effects in your own germplasm before widespread use.

Technical Details

This simple PCR-based test consists of a single primer pair that can be run on a variety of platforms including agarose gels. For more details on this DNA test, other peach tests, or tests for other rosaceous crops, visit www.rosbreed.org/breeding/dna-testing.

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Look For Updates: 31 DEC 2017