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Molecular analysis of genetic diversity an in situ collection of characterization of S-alleles in sweet cherry(*Prunusavium L.*) with novel designed primers

Kamal Sharma, PetrSedlák, Pavel Vejl and **Josef Soukup**
Czech University of Life Sciences, Czech Republic

Sweet cherries (*Prunusavium*(L.) are usually diploid (2n) with 16 chromosomes.Gametophytic self-incompatibility (GSI) in cherry is controlled by the multi-allelic S-locus, which prevents self-fertilization. The S-genotype character is agronomically important because cultivars with the same S genotype are cross incompatible.The length variation of the introns and the conservation of various regions of the exons of S_3, S_4, and S_9 prompted us to design primers for amplification ofspecific alleles. These newly designed allele specific primers would be useful for determining the genotypes of untested cultivars and seedlings. The mentioned allelesdescribed earlier in the literature were not undoubtedly identifiedin our cultivars and detection was not consistent.It was used the consensus and allele-specificprimers to investigate S-RNases allele in cultivarswhich were described as positive for these specific allele's. Furthermore, to investigate their general applicability in cherry, we tested the consensus and allele specific primers on a range of cherry cultivarscollected from Research and Breeding Institute of Pomology Holovousy Ltd., Czech Republic.In the presentation, it is described the application and suitability of newly designed primers for cherry genotyping. We optimized the annealing temperatures of these primers which greatly reduced the problem of false negatives. The study demonstrates the application of newly designed primers in testing of sweet cherry genotypes.

Biography

Kamal Sharma has completed his PhD from the Central Tuber Crops Research Institute, Trivandrum, India. At present he is doing his postdoctoral at Genetics and Breeding Department, Czech University of Life Science, Prague. He is studying sequential polymorphisms of self-incompatibility locus (S-locus) in cultivated and wild cherries (*Prunusavium L.*). He has published 24 research papers and abstracts at different conferences.

sharma@af.czu.cz