

SNP Diversity in Cultivated Tomato

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Approximately 6,000 accessions of domesticated tomato (*Solanum lycopersicum* L.), including open-pollinated populations and inbred lines, are conserved at the USDA, ARS Plant Genetic Resources Unit (PGRU). This collection provides a publicly available resource for breeding and experimentation to end-users around the world. An understanding of the patterns of allelic diversity within domesticated tomato will facilitate utilization of our germplasm collection. We sequenced 50 gene fragments in a diverse set of *S. lycopersicum* accessions and several wild tomato species. Some of the wild species accessions were used historically as sources of alleles for crop improvement. We will review diversity patterns (numbers of alleles, allele frequencies, heterozygosity, numbers and types of SNPs, recombination) within the domesticated tomato sample and compare domesticated with wild species alleles. Genetic distance estimates among sequences will be used to help interpret observed patterns of variation within *S. lycopersicum*.