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Poster Abstract – C.73

PRODUCTION AND MOLECULAR CHARACTERIZATION OF SYNTHETIC POLYPLOIDS OF TUBER-BEARING *SOLANUMS*

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Wild *Solanum* species offer unique possibility for potato breeding. They mainly occur at diploid (2n=2x=24) level, and can be easily crossed with haploids (2n=2x=24) extracted from cultivated *S. tuberosum* (2n=4x=48). However, a number of diploid species are sexually isolated and their chromosome complement needs to be doubled before use in crosses with haploids. To introgress resistance to *Phytophthora infestans* into the cultivated gene pool, we have identified resistant genotypes among *in vitro* regenerated tetraploid derivatives obtained from diploid incongruent species *S. bulbocastanum* (blb) and *S. cardiophyllum* (cph). Furthermore, in order to study the genetic variability induced by *in vitro* polyploidization, AFLP analysis was performed on 28 synthetic tretraploids, 10 synthetic diploids, and on the parental genotypes they derived from. The 7 primer-enzyme combinations allowed the detection of polymorphisms of interest between the regenerants with different ploidy level. The genetic material evaluated was clustered based on the matrix of genetic similarities and a dendrogram was constructed to distinguish different genetic groups. The lowest similarity was shown by the diploid parents and their synthetic tetraploids. We hypothize that a combined effect of polyploidization and somaclonal variation has been involved in the observed genetic variability. The implications due to our findings are discussed from a genetic and breeding standpoint. Research ongoing aims to study in details the effect of polyploidization on our synthetic polyploids.