

Summary

One of the fundamental aspects to improve a character is the knowledge of the genes that control it. One of the alternatives to find out which are those genes is to look for mutants in those characters and to identify which ones have changed with respect to the wild type. In comparison with other methodological alternatives, the use of insertional mutagenesis presents an obvious advantage since if the mutated gene is molecularly labeled, its subsequent identification is greatly facilitated.

In order to identify genes related to tolerance to drought and salt stress in tomato, after developing the necessary methodologies, a part of the tomato T-DNA and *Solanum galapagense* lines of our collection has been scrutinized. In addition to phenotypically and genetically characterizing the identified lines, we have improved the knowledge of mutants previously detected in our group by their relationship with these characters.

Two new mutants have been identified and characterized with alterations in their tolerance to drought. The characterization of three mutants previously identified in our group and related to salinity tolerance has been improved. We have identified and characterized 19 affected mutants in developmental characters that could be related to tolerance to abiotic stresses. Finally, after the identification of the gene responsible for *dor*, a mutant with changes in its capacity for rooting and adventitious organogenesis, its functional analysis was started by obtaining and analyzing the corresponding RNAi lines.