ABSTRACT

CLONING AND CHARACTERIZATION OF REPETITIVE DNA IN PEPPER (*CAPSICUM ANNUUM*)

Pepper (*Capsicum annuum*) has two to three times the genome size as its close relative, tomato (*Lycopersicon esculentum*) but approximately the same number of genes. A likely hypothesis to explain the genome size difference is that pepper has more repetitive DNA sequences than does tomato. The 63 identified clones were grouped into 16 repetitive DNA families by cross-hybridization. Copy number of each family was estimated by reconstruction dot-blots. The repetitive DNAs make up a maximum of 10% of the pepper genome, and there are at least four times as many copies overall in pepper than in tomato. One member of each repetitive DNA family was end-sequenced, and the sequences were compared to sequences in GenBank and the TIGR Plant Repeat Database. The pepper repeats matched transposon, retrotransposon, and ribosomal RNA gene sequences in other plants. Further investigation of the sequences revealed many small, internally repetitive motifs within the clones' sequences.

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August 2004