Proceedings of the Joint Meeting AGI-SIBV-SIGA
Assisi, Italy – 19/22 September, 2011
ISBN **978-88-904570-2-9**

Poster Communication Abstract – 9.25

MOLECULAR ANALYSIS OF T-DNA INSERTION EVENTS IN ALFAFA

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T-DNA, alfalfa, TAIL-PCR

Agrobacterium tumefaciens-mediated transformation is an established method to introduce foreign genes into plants. This bacterium is capable of transferring a DNA (T-DNA) comprised between two imperfect border repeats (left border, LB and right border, RB). Anomalous T-DNA production, random insertion into the plant genome and possible DNA rearrangements during T-DNA integration make each transformation event unique and not reproducible.

Alfalfa is an important forage crop in which *Agrobaterium*-mediated transformation is established, but no information is reported in literature about the characterization of integration events.

Using TAIL-PCR, we cloned the T-DNA integration sites of some transgenic lines produced in our laboratory . Preliminary results indicate that TAIL-PCR can be successfully used to isolate junction sequences between the T-DNA borders and the alfalfa genome. Sequence alignment reveals features of T-DNA processing at LB by *Agrobacterium*. BLAST analyses of the insertion site sequences reveals homologies with the genome of *Medicago truncatula* (L.), a closely related species. Further analyses of LB and at RB junction sequences are in progress and will be presented.