06.02-045 ALUMINUM TOLERANCE IN TOBACCO PLANTS TRANSFORMED WITH A PLANT AND A BACTERIAL CITRATE SINTHASE GENES REGULATED BY ROOT SPECIFIC AND CONSTITUTIVE PROMOTERS. Cristiane Luiza Belele, Geraldo Magela Cançado, Andréa Almeida Carneiro, Edilson Paiva, Antônio Álvaro Corsetti Purcino, Maurício Antônio Lopes, Newton P. Carneiro. Embrapa Milho e Sorgo. CP 151, CEP 35701-970, Sete Lagoas, MG, Brazil. newtonc@cnpms.embrapa.br

Aluminum (Al) toxicity is one of the most limiting factors for crop growth in tropical acid soils. One of the mechanisms used by plants to cope with this problem is root exudation of Al-chelating organic acids to the rhizosphere. Fuentes et al (1996) have demonstrated that tobacco and papaya plants transformed with a *Pseudomonas aeruginosa* citrate sintethase gene under the control of the constitutive CAMV35S promoter excreted 4 times more citric acid to the rizosphere than untransformed plants and were more tolerant to Al toxicity. The objective of this work was to compare Al tolerance of tobacco plants harboring constructs of *Daucus carota* and *Escherichia coli*'s CS coding sequences under a root especific and constitutive CAMV35S promoters. The complete *Daucus carota* CS coding sequence was isolated by RT-PCR from leaf mRNA using the primers designed in according with known sequences. The same gene without the mitocondrial signal peptide was isolated by the same method. The *E. coli* CS coding sequence was isolated by PCR using genomic DNA. The CAMV35S promoter was isolated from the pCAMBIA binary vector by PCR using the designed in according with published sequences. The root specific promoter ToRB7 (S45406) was isolated from tobacco genomic DNA by PCR using the same strtegy. Different combinations of genes and promotors were cloned in the binary vector pCAMBIA 1303 and were used to transform tobacco by *Agrobacterium*. Transformed tobacco plants were compared in selective media with variable concentration of Al. The results demonstrated that the *Daucus carota* CS gene under the control of a root specific promoter showed more biomass productivity than the plants containing the same gene under the constitutive promoter CAMV35S in the presence and absence of Al. This work was supported by grants from PRONEX, CNPq, European Community and SEP/EMBRAPA