# Genetic Transformation and Inheritance of Transgenes in Forage Grasses. (C07-wang084730-Oral)

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## Abstract:

Transgenic tall fescue and Russian wildrye plants were recovered after microprojectile bombardment of suspension cells and subsequent selection in the presence of high concentration of hygromycin. Fertile transgenic plants were obtained after vernalization under field conditions. T1 and T2 progenies of tall fescue were obtained after reciprocal crosses between transgenic and untransformed control plants. PCR and Southern hybridization analyses revealed a 1:1 segregation ratio for both transgenes in the T1 and T2 generations. Southern hybridization patterns were identical for T0, T1, and T2 plants. Transgenic approaches have been explored to generate novel germplasm of forage grasses. Two lignin biosynthetic genes, caffeic acid O-methyltransferase (COMT) and cinnamyl alcohol dehydrogenase (CAD), were cloned. Transgenic tall fescue plants were generated using sense and antisense COMT and CAD gene constructs by microprojectile bombardment. Down-regulation of COMT and CAD resulted in altered lignin content and increased digestibility in transgenic plants.

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## Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:15 pm

## Keywords:

Genetic transformation, Forage grass, transgene