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Poster Abstract - H.14

PRODUCTION OF MARKER-FREE WHEAT (*TRITICUM AESTIVUM*) PLANTS TRANSFORMED BY *AGROBACTERIUM*

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Wheat (*Triticum aestivum*) is an important food crop, because of both the nutritional value of its seeds and the unique technological properties of flours prepared from those seeds.

Plant genetic transformation has become an important tool for functional genomics and as an adjunct to conventional breeding programmes.

Removal of a selectable marker gene from genetically modified crop alleviates the risk of its release into the environment and hastens the public acceptance of genetically modified crops, it is therefore desiderable to generate marker-free transgenic wheat plants.

Recently, chemical-inducible Cre/*loxP* DNA recombination system (CLX) (1) have emerged and seem to provide a highly reliable method to generate marker-free transgenic *Arabidopsis* plants after a single transformation.

Here we report the production of marker-free transgenic wheat using CLX. We have used *Agrobacterium* strain AGL1 harbouring pX6-GFP , which contains the CLX system, *nptII* and *GFP*. Untill now we have obtained transgenic lines (cv. Bobwhite) with a transformation frequency of 2.3% demonstrated by marker-gene expression and molecular analysis.

Seeds from transgenic lines have been used to propagate the material. We are analysing T_1 plants for the presence of the transgene by PCR and Paromomicyn leaves spray. Furthermore we are performing chemical-induction tests on leaf protoplasts from these lines in order to verify the functionality of the system.

The aim of this project is to obtain complete marker free plants expressing GFP.

Zuo, J., Niu, Q.-W., Moller, S.G. & Chua, N.-H. Chemical-regulated, site specific DNA excision in transgenic plants. *Nat. Biotecnol*. 19, 157-161 (2001).