

# Plant *Molecular Farming*

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Transgenic plants are currently being actively pursued as a cost-effective and safe heterologous system for expression of recombinant proteins with high commercial values. Development of various plant-based protein expression systems is getting very competitive, and each system has its advantages and disadvantages. There is not yet a consensus as to the best plant species or tissues for commercial protein production. Final choice will depend on which one offers the highest safety (for both human and environment), reasonably good quality, and lowest costs. Choice will also depend on how the proteins are to be used. Currently, the technical challenges that need to be solved are essentially all related to expression levels of recombinant proteins. Higher expression levels could be reached by identification of novel, stronger promoters in intact plants or suspension cells, or better plant species or organs as expression hosts.

My lab has developed cereal-, tuber- and suspension cell-based protein expression systems. We have identified several novel promoters suitable for expression of recombinant proteins in the various expression hosts. At initial stage, we have expressed proteins that are to be used in food industry, as feed additives, and as animal vaccines, and the yields have been competitive. Our next stage is to express proteins that are to be used as biopharmaceuticals. We have also continuously modified promoters to enhance their activities for protein expression. In my lecture, I will elaborate and discuss on all the issues that I have raised.

All are welcome



**Date:** Friday October 11, 2002  
**Venue:** LT 20  
**Time:** 4 - 5 pm  
**Host:** A/P Prakash Kumar