

PLANT PROMOTER INDUCED UPON HARVEST

Patent Status:

US patent 7,388,091
US patent 7,329,798

License Status:

available for license

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Description:

Three plant promoters and a method to locate other plant promoters that are only induced upon harvest have been identified in alfalfa.

Advantages:

- Tightly regulated expression of proteins until several hours after harvest
- Also inducible in plant cell culture
- Possible expression of proteins that would normally be detrimental or toxic to plant growth
- Very high levels of gene expression
- Shown to function in other crop species including tobacco (left) and legumes

Potential Markets:

- Agronomic uses may include the production of enzymes to degrade difficult to digest portions of the plant.
- Molecular farming uses may include the production of proteins that would otherwise slow plant growth

Status:

- Transgenic plant expression studies ongoing with plants grown in greenhouse.



Figure (left): Expression of the inducible promoter-GUS in tobacco at time zero (top) and 24 hr post-harvest (bottom). The expression is tightly regulated in that repeatedly no expression has been observed at time zero, and does not appear until several hours after harvesting. The extent and intensity of blue colouration in our promoter-GUS plants noticeably exceeds that of plants containing GUS gene controlled by the 35S promoter.