

Holy smokes, a good use for tobacco

Genetically modified tobacco plants helped slash the cost of vital inflammation research.

BY JOHN MINER
Free Press Health Reporter

London scientists have succeeded in using genetically engineered tobacco plants to treat inflammatory bowel disease, a breakthrough that holds out hope of a new treatment for the debilitating disease.

"It is a milestone," Anthony Jevnikar, chief scientific officer of London-based Plantigen Inc., said yesterday.

The London scientists, a team that combined medical and agricultural researchers,

modified tobacco plants to produce the human protein interleukin-10, known to reduce inflammation in humans.

Fed to mice with an inflammatory disease, interleukin-10 reduced the severity of the inflammation and improved the health of the mice.

"I'd be very surprised if this did not have a similar effect in people," said Jevnikar, who is also director of kidney transplantation at London Health Sciences Centre.

Inflammatory bowel disease includes ulcerative colitis and Crohn's disease which affect

more than one million people in North America, including 100,000 Canadians.

The research results were published in *Plant Biotechnology Journal* by the research team which included scientists from Agriculture Canada, the Lawson Health Research Institute, and Plantigen, a discovery company spun off from Lawson.

Federal Agriculture Minister Chuck Strahl said the research was an exciting breakthrough that shows great promise.

By using tobacco plants engineered to produce the protein, the scientists were able to slash the production costs.

If usual pharmaceutical fer-

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mentation techniques had been used, the costs of the study on mice would have been hundreds of thousands of dollars a week, Jevnikar said. "It would have been simply unaffordable."

Researchers hope to use genetically engineered plants to produce other pharmaceuticals at much lower costs than currently possible.

"We are on the verge of

this," said Jevnikar.

"London is most definitely a world leader in all of this."

Plantigen is also working on a preventive treatment produced in genetically engineered plants for Type 1 diabetes.

The tobacco plant was used in the research because there is almost no chance the genetically engineered variety could spread to other plants.

As an added precaution, all of the tobacco plants with interleukin-10 were grown indoors, and a mutant tobacco variety was used that doesn't produce any seeds.

jminer@lfpress.com