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 gets a reprieve

Geoffrey Scotton reports

BUSINESS ON SUNDAY

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SUNDAY, FEBRUARY 12, 2006

The hard truths about MAD COW

JUNGLE BUGS

An unlikely energy answer

PAUL ELIAS

THE ASSOCIATED PRESS
SAN FRANCISCO

The key to kicking what U.S. President George W. Bush called America's oil addiction could very well lie in termite guts, canvas-eating jungle bugs and other microbes genetically engineered to spew enzymes that turn waste into fuel.

It may seem hard to believe that microscopic bugs usually viewed as destructive pests can be so productive. But scientists and several companies are working with the creatures to convert wood, corn stalks and other plant waste into sugars that are easily brewed into ethanol — essentially 199-proof moonshine that can be used to power automobiles.

Thanks to biotechnology breakthroughs, supporters of alternative energy sources say that after decades of unfulfilled promise and billions in government corn subsidies, energy companies may be able to produce ethanol easily and inexpensively.

"The process is like making grain alcohol, or brewing beer, but on a much bigger scale," said Nathanael Greene, an analyst with the environmental nonprofit Natural Resources Defence Council. "The technologies are out there to do this, but we need to convince the public this is real and not just a science project."

Using microbes may even solve a growing dilemma over the current ethanol manufacturing process, which relies almost exclusively on corn kernels. A growing concern throughout the Midwestern corn belt is that the 95 U.S. ethanol plants are increasingly poaching corn meant for the dinner table or livestock feed.

The idea mentioned by Bush during this year's State of the Union speech — called "cellulosic ethanol" — skirts that problem, because it makes fuel from farm waste such as straw, corn stalks and other inedible agricultural leftovers. Cellulose is the woody stuff found in branches and stems that makes plants hard.

Breaking cellulose into sugar to spin straw into ethanol has been studied for at least 50 years. But the technological hurdles and costs have been so daunting that most ethanol producers have relied on heavy government subsidies to squeeze fuel from corn.

Researchers are now exploring various ways to exploit microbes, the one-cell creatures that serve as the first link of life's food chain. One company uses the microbe itself to make ethanol.

Others are taking the genes that make the waste-to-fuel enzymes and splicing them into common bacteria.

SEE ENERGY, PAGE E5

Top expert reveals much is yet unknown about the disease

GINA TEEL
CALGARY HERALD

When it comes to mad cow disease, or BSE as scientists prefer to call it, Dr. Jean-Philippe Deslys is the go-to guy.

One of the world's leading authorities on BSE and top researchers in the area of prions, the misfolded proteins linked to BSE, the Paris-based Deslys is part of an International Research Advisory Council. The council will provide strategic direction to the newly minted \$35-million

Q&A

Alberta Prion Research Institute.

Head of the Prion Group at the French Atomic Energy Commission, Deslys is also project coordinator for the European Network of Excellence or Neuro-Prion, and is an advisor to the World Health Organization and the U.S. Food and Drug Administration.

In addition to his re-



Photos, Calgary Herald Archive
Jean-Philippe Deslys, an expert on BSE, says the latest case of mad cow disease in Alberta is not a surprise.

search, which includes, among other things, the human susceptibility to prion contamination, Deslys is author of Mad Cow Disease: The Risk to Humans.

Deslys also helped in the development of a rapid diagnostic test for BSE, known as the Bio-Rad test. He advocates the mandatory testing of all cattle

over 30 months of age.

Q: In Alberta we've had another case of BSE diagnosed recently in an animal born after the feed ban. I know the science says, based on what's happened in Scotland and elsewhere, that this is not unusual.

What are your thoughts on this latest case — is it a surprise we're finding it?

A: It is not a surprise. We have seen it in all the countries. The measures taken to protect the food of the animals are not absolute. We know that there are holes in the system and that it can happen. Even recently in the U.K., a very young animal last year developed the disease, so that's an abnormality suggesting an important infectious dose that could have entered into his foodstuff.

In Poland last year they also had a young case, so it indicates that despite the very strict measures which have been taken, you have holes in the system.

We are dealing with thousands of tonnes of materials, so as these are global measures, of course by definition, you can have the possibility of escape.

SEE TRUTHS, PAGE E4

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CALGARY HERALD
 A city of opportunity returns (2006)

Guest Book for
JOHN SMITH

December 6, 2004

Dear Betty and Family
 John's exceptional wit and style was exceeded only by his heart. He had our respect, admiration and love. And on the day he cooked, he had appetite. Michelle and I are blessed to have had John in our lives.
 Michelle (Calgary, Alberta)