

Soybean genetic code cracked

SCIENTISTS have unveiled the genome of the soybean, saying it was an achievement that should deepen understanding of one of the world's most important crops, help to boost yields and defend the plant against pests.

The study, published by the journal *Nature*, provides a springboard for research into soy's DNA structure and protein-making machinery, its authors said.

Eighteen organisations, most of them American, teamed up in a 15-year endeavour that yielded a draft of 85 per cent of the soybean's 1.1 billion base pairs, the "rungs" in the double-helix ladder of DNA.

"Soybean and other legumes play a critical role in global food security and human health and

are used in a wide range of products, from tofu, soy flour, meat substitutes and soy milk to soy oil-based printing ink and biodiesel," said Molly Jahn, deputy under secretary at the US Department of Agriculture.

"This new information about soybean's genetic makeup could lead to plants that produce more beans that contain more protein and oil, better adapt to adverse environmental conditions or are more resistant to diseases."

More than 46,000 soy genes have been identified, including key genes involved in the transformation of water, sunlight, carbon dioxide, nitrogen and minerals into energy and proteins.

One early breakthrough was the discovery of a gene that appears to confer resistance to a disease

called Asian soybean rust, which can devastate up to 80 percent of a harvest.

Another, more futuristic, benefit could be in a next-generation form of biodiesel.

More than 1,000 genes involved in lipid metabolism have been spotted, says researcher Gary Stacey of the National Centre for Soybean Biotechnology at the University of Missouri.

"These genes and their associated pathways are the building blocks for soybean oil content and represent targets that can be modified to bolster output and lead to the increase of the use of soybean oil for biodiesel production."

Biotechnologists have unravelled the genomes of rice, corn and the grape vine among other staples. — AFP

