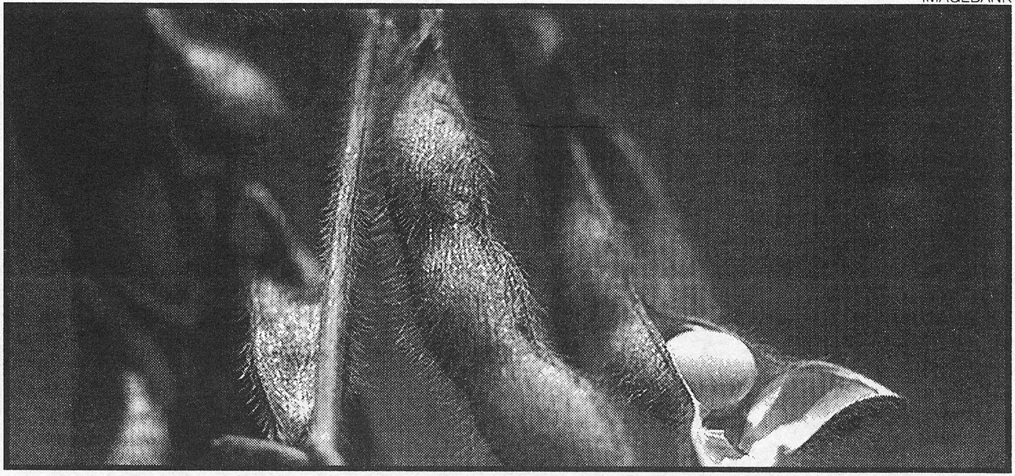
Ruthless beans punish bacteria

IMAGEBANK



One mean bean: soya takes revenge on bacteria that do not supply it with nitrogen

Soya beans may be good for you, but that doesn't mean they're good. Biologists at the universities of Edinburgh and California have found that the beans display a ruthless streak, punishing uncooperative bacteria that do not supply them with the nitrogen they need, **writes Olga Wojtas**.

Stuart West, Royal Society research fellow in Edinburgh's Institute of Cell, Animal and Population Biology, said: "We suspected this kind of thing might be happening, but the findings are pretty shocking and very impressive. Plants are more like us than we thought."

The findings, published in the journal *Nature*, suggest that the plant world is governed by something more akin to Richard Dawkins' concept of the "selfish gene" rather than an altruistic view that species cooperate to sustain life.

Dr West said leguminous plants such as peas, lupins, beans and clover had bacteria living in their roots that took nitrogen from the air and put it in a form the plants could use for growth.

He said: "We were wondering why the bacteria bothered doing this because it's very energetically expensive for them. They could be using that energy for themselves to divide, reproduce and make lots more bacteria."

But when the researchers reduced the nitrogen available to the bacteria, they found the plants took revenge by cutting off the oxygen supply to the roots.

"They seem to be saying, 'If you don't give me nitrogen, I'm going to kill you off', and that forces the bacteria to behave," Dr West said.

TUES 5.9.03 General – Stuart West (ICAPB) Andrew Allen (Biological Sci)