

## Soya rotation boosts maize yields

Studies show a maize-soya rotation fixes enough nitrogen to boost maize yields. Annelie Coleman reports.

SOYA, IN ROTATION WITH MAIZE, HAS A VITAL ROLE TO PLAY in increasing maize production, writes Dr Pat Caldwell, senior lecturer in plant pathology at the University of KZN. A study by Guy Thibaud, from the Department of Agriculture and Environmental Affairs at Cedara, showed significant differences in maize yields produced in a soya-maize rotation under a no-till system. In the 2006/07 season, these yields increased markedly compared to a maize-on-maize system, and soya's nitrogen-fixing benefits were clear at lower nitrogen applications. In the 2007/08 season, maize yields were significantly higher even when a second maize crop followed the soya. Even at nitrogen applications of as much as 180kg/ha, maize-on-maize yields were lower than the second maize crop that followed the soya.

Dries Cronje, a soya producer from Kriel in Mpumalanga, investigated 16 minimum or no-till farmers who practise a maize-soya rotation. He found that lands planted to soya the previous season realised dryland-maize yields of 11t/ha. Maize-on-maize lands only yielded 5,5t/ha, with more root and stem rot and other diseases. Where maize was planted for a second year with soya as a rotation crop, 8t/ha was harvested.

Soya imports are one of the main contributors to South Africa's current account deficit. We annually import about 500 000t of edible oil at R6 billion. To satisfy a need of about 2 million tons of protein for animal consumption, we import another 1 million tons of mostly soya oilcake worth over R3 billion. "If 10% of the area planted to maize is planted in rotation with soya, the production of soya will double," says Dr Jan Dreyer from the Agricultural Research Council. The Protein Research Foundation has set an annual production target of 1 million tons of soya over the next five years. They believe this will mean doubling the 250 000ha planted to soya annually.

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Rotation with soya can boost two consecutive maize yields.  
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