The secrets of

MR SUPERSOYA

Andrew Fyvie from Bergville, KwaZulu-Natal (KZN), was the 2009 winner of the Protein Research Foundation’s Super Soya Competition in both the dryland and irrigated soybean categories.

This is the 19th year that the Super Soya Competition has been running in northern KZN. This year the northern and southern competitions were combined bringing the final total number of entries to 57—the highest number ever recorded to date. The Bergville/Winterton area had the highest number of entries (26), followed by Vryheid (14), Newcastle (13) with just four entries from Dundee.

The aims of the Super Soya Competition are to:
- Promote soybean production in KZN;
- Improve the profitability of soybean production;
- Inform producers on preferred agronomic production practices;
- Improve the protein content of soybeans in KZN; and
- To promote precision farming.

The competition provides a platform for producers to have the opportunity to exchange ideas, knowledge and experience and to learn about different production practices. As usual, two criteria were used to judge the winners, i.e. gross margin/ha and grain yield/ha.

Besides the fact that Bergville recorded almost 70% more rain and 280 more heat units than its long-term means, it appears that the Fyvies have some secrets for regularly producing higher than normal yields for the area.

In an interview with Andrew Fyvie on the family farm, Tregema, which he runs with his father, John Fyvie, he shared what he believes are some of their secrets for successful soybean production.

Is pH a problem on your farm?
In this area it is not economically viable to lime excessively as we can never increase the pH to 4.7 or more. Consequently, acid saturation of 5 or less is optimal.

Do you practice conventional or no-till on your farm?
We have been practicing no-till for over 19 years and have built up a large depth of organic matter providing a marked increase in soil moisture. Minimum tillage and no-till are becoming a more popular way of growing soyas and in 2009 was practiced by 75% of the entrants to the Super Soya Competition.

It always was and still is the policy in KZN to encourage producers to build up their soil’s fertility status over time to the optimum levels determined for each soil type. How do you accomplish this?
The soils on our farm are of the Hutton and Avalon form. Although the practice of over-fertilizing the previous crop and then to plant soyas without fertilizer is not a recommended practice, we do practice this and have not fertilized our soya crop for 16 to 17 years. In fact, we found a negative response when fertilizers were applied to our soya crop. In addition, we do not apply any growth stimulants or trace elements. Our P and K levels remain good.

Do you believe in the advantages of practicing crop rotation?
I believe that many producers underestimate the value of a good crop rotation system. We practice two years maize and one year soy followed by winter wheat. We fertilize our maize crop with 50 kg P/ha and 50 kg K/ha but only apply the recommended amount of nitrogen (160 kg N/ha) as we use the beneficial effect of the nitrogen-fixing abilities of soyas. We apply 30 kg/ha less nitrogen when our winter wheat follows a soya crop.

I see that you are one of the 91% of producers who entered the 2009 Super Soya Competition who used GMO seed. What advantages do you find with this?
On dryland we planted PAN1666RR and on our irrigated fields we used PAN535RR, both GMO seed, each accounting for 9% of the total GMO seed used in the competition. The advantages we have found of using GMO seed is that we have had better control of the more aggressive weeds found in our soybeans.

Planting dates: do you have a favourable time for planting?
From previous years’ experience, we have found that on our farm, our best planting dates are from the 20th October through to the 10th of November, provided there has been sufficient rain and it is not too wet to get into the lands.

What plant populations do you aim for?
On dryland we aim for about 380 000 plants/ha, while under irrigation we aim for 450 000 plants/ha. Using a wheat drill we use a 17.5 cm
inter-row spacing and an in-row spacing of 6 cm - 8 cm. This allows the plants to canopy very quickly with the result that we only have to spray once with Round-up. This, together with our long-term no-till policy, evaporation and consequently moisture loss, is markedly reduced.

What about soybean rust? Is this a problem on your farm?
We have never sprayed for soybean rust (SBR) as we plant early using short-season cultivars and so avoid the conducive environmental conditions in which SBR thrives, i.e. we practice disease escape. However, last year my neighbour’s soya crop, was severely attacked by SBR even though he used the same cultivar as I did, but planted one week later. For the first time, I was forced to spray preventatively.

Are insect pests a problem in your soybeans?
If, on our weekly checks, we find ten to twelve worms per m² (by shaking the plants onto a bag) we apply pesticides. In 2009, we used Karate in our dryland production but no pesticides were required on soyas under irrigation.

Do you use any seed treatments?
In both our dryland and irrigated fields we apply Mollyflo together with Rhizobium at planting. Great care is taken to treat the seeds carefully. I have found that using a cement mixer attached to a tractor gives good mixing without damaging the seed which is only mixed with the Rhizobium just before planting. Keeping the Rhizobium in a cool place is essential to ensure good nodulation. From our experience we have not seen any advantages in using growth stimulants.

Pod height is important for harvesting with a combine harvester. What lower pod height do you achieve?
Pod height was 22 cm above ground and plant height was 69 cm on irrigated land, while under dryland pod height was 28 cm above ground and plant height 101 cm.

Then, the ultimate question: grain yield (tons/ha), grain income/ha and gross margin/ha? Do your secrets to successful soybean farming pay off?
We achieved 3.18 tons/ha and 4.10 tons/ha on dryland and irrigated lands, respectively. Based on an average Safex price of R3 300/ton for grain yield, we achieved a grain income/ha of R10 487,12 and R13 543,26 on dryland and irrigated lands respectively. With regard to gross margin/ha, we achieved R7 175,43 and R10 161,74 on our dryland and irrigated land respectively, making us the 2009 Super Soya Competition winners.

Andrew, do you have any final words for successful soybean production?
We believe that the secret to successful farming, whatever the crop, is based on attention to detail – doing each job correctly and at the right time.