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MEDIA RELEASES

SUNFLOWER NUTRITION PUT TO THE TEST

Sunflower growers in northern New South Wales will soon be more the wiser when it comes to nutrient management in their crops, thanks to research being undertaken through the Better Oilseeds project, funded by the Grains Research and Development Corporation and Australian Oilseeds Federation.



TRIALS: Stephanie Belfield (left) and Loretta Serafin aim to make sunflower fertiliser decisions easier for growers through better oilseeds trials.
Photo: Sue Knights.

Demonstration sites at Tulloona and Bellata were conducted over summer to investigate the effect of different rates of nitrogen and sulphur on sunflower yield and oil content. A further small plot research site was established at Pine Ridge to complement these large strip trials and look not only at nitrogen and sulphur but also potassium nutrition

for sunflower.

The sites, coordinated by Loretta Serafin of NSW DPI in Tamworth and Stephanie Belfield of HMAg in Moree, aim to give growers a better grip on the interaction between sulphur and nitrogen nutrition and to find out if current recommendations for potassium need revising.

“Sunflowers are heavy users of nitrogen and potassium,” said Ms Serafin.

“We were particularly interested in potassium as we believe sunflowers crops need around 30 kilograms of the nutrient to produce one tonne of seed, eight of which is removed in the seed. Some regular growers of sunflowers consistently pull off close to two tonnes per hectare each year, so we know that a lot of potassium is being removed in the seed.”

Potassium is an important nutrient in the growth and water use of plants.

Ms Serafin said she hopes the trial will provide a greater understanding of potassium requirements of sunflower crops and allow growers to develop more targeted fertiliser strategies based on this.

She said the trial would also be important to validate work showing that sulphur and nitrogen levels in the soil are interactive so may impact on the other.

“Sulphur forms partnerships with nitrogen. In combination they determine leaf area of the crop. Nitrogen and sulphur deficiency reduces yield by reducing both seed weight and the number of seeds per plant.”

“Most growers on the Northwest Plains apply high rates of sulphate of ammonia (containing both nutrients), at around 250 to 300 kilograms per hectare,” she said.

“Basically the sulphur is coming free with the nitrogen, so we were interested in seeing the effect of these nutrients together.”

For every tonne of sunflower seed produced, the plant requires around 44 kilograms nitrogen and five kilograms of sulphur, she said.



Ms Serafin said that while deep soil tests for nitrogen provided a good indication of levels of the nutrient, most growers only undertook soil testing around one in three years, and may not have a good handle on nitrogen levels immediately before sowing.

“Ideally, you would do a deep soil nitrogen test before sowing,” she said.

However, Ms Serafin also said that the very deep root system of sunflowers gives it access to mobile nutrients like sulphur and nitrogen deep within the soil profile.

She said samples for the deep nitrogen tests in the region were taken to a depth of 1.2 metres below the soil surface, but a sunflower root system can grow to around three metres below the surface in soils without constraints, such as sodicity and high chloride levels.

Sulphur tests are usually performed on samples of topsoil. However, this is not ideal for sulphur as much of the nutrient is found in the subsoil, like nitrogen.

In addition to the nutrient trial and demonstration, a Better Oilseed trial will be undertaken in Central Queensland this year to assess the tolerance of commercially available hybrids and breeding lines of sunflower for tobacco streak virus.
