

“Phos for Us”

Throughout 2010 **Sucrogen BioEthanol** plant in **Sarina, Central Queensland** has been focused on developing their personnel in Frontline Problem Solving skills.

Learning how to **see** and **solve problems** and **share the learning** is the key to solving them quickly and achieving great team results.

Recently, a problem was identified at the Oonooie processing plant in Sarina where a decrease in the Phosphorus levels in the fertiliser blends was noticed.

Oonooie utilises a material called Biodunder (by-product from Sucrogen's Bioethanol fermentation process), along with other materials, in fertiliser blends which it sells to the local farming community. Phosphorus may be added to the Biodunder in the form of Diammonium Phosphate (or DAP) in order to provide specific formulations for farmers.

Due to this, a problem solving group was set up under the leadership of Damian Baxter, Oonooie Co-ordinator, to investigate the low Phosphorus levels in Biodunder blends. The team consisted of a combination of laboratory and Oonooie operators including: Shelley Skien, Brooke Dallow, Richard Mills and Graham Mansfield.

Starting off, the team developed a comprehensive problem specification in order to really understand the true details of the problem. They then used a Cause & Effect “fishbone” diagram to brainstorm the number of possible causes involved. They compared these to the original problem specification which would help them to determine the most likely cause.

Once identified the most likely cause was put through a number of trials to confirm that it was in fact the true cause. The trials included confirming the plants volumetric flow rates, the recipes for the fertiliser mixes and the chemical analysis of the various components of the product.

The team found that the current DAP source contained both a soluble and insoluble portion of Phosphorus (the insoluble portion made up 12% of the Phosphorus in the DAP). This insoluble portion was not being accounted for in the analysis resulting in the low levels of Phosphorus measured in the fertiliser product.

In the short term the issue was resolved by compensating for the lower soluble phosphorus component in the raw material by adjusting how the analysis of the material was reported.

In the longer term a process has also been put in place to sample and measure the DAP to ensure the correct amount of DAP is added to the biodunder to obtain the required chemical balance for the product.

Ultimately, the team achieved a great result which will keep the customers happy. We congratulate the team on their great performance, well done!

For further information please contact:



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