

Millchem Biotech

- Potato Processing Plant

Summary

- We had approached a company who process Potato's and needed assistance in proving the quality of the effluent leaving the plant.
- Currently this plant only have a Clarifier which makes up the waste process plant.
- The levels of effluent leaving the plant were not satisfactory, and needed improvement.
- Our Millbac range of products have been designed to specifically break down carbon based waste in an effect manner, to improve the quality of the effluent leaving the plant, without the need to significant increase on the current infrastructure.
- We have a 3 stages approach, which involves the use of Specially designed Bacteria (Millbac FP), that focus on the Biodegradation of the Carbon based waste as well as oils and fats.
- When then make use of a Bacteria benefiting aeration system, to enhance the activity of the bacteria been used.
- Finally we apply our Millbac FC, which acts as a flocculent to help reduce the soluble based organic and inorganic compounds, to improve the clarity of the effluent.

Results of the lab tests

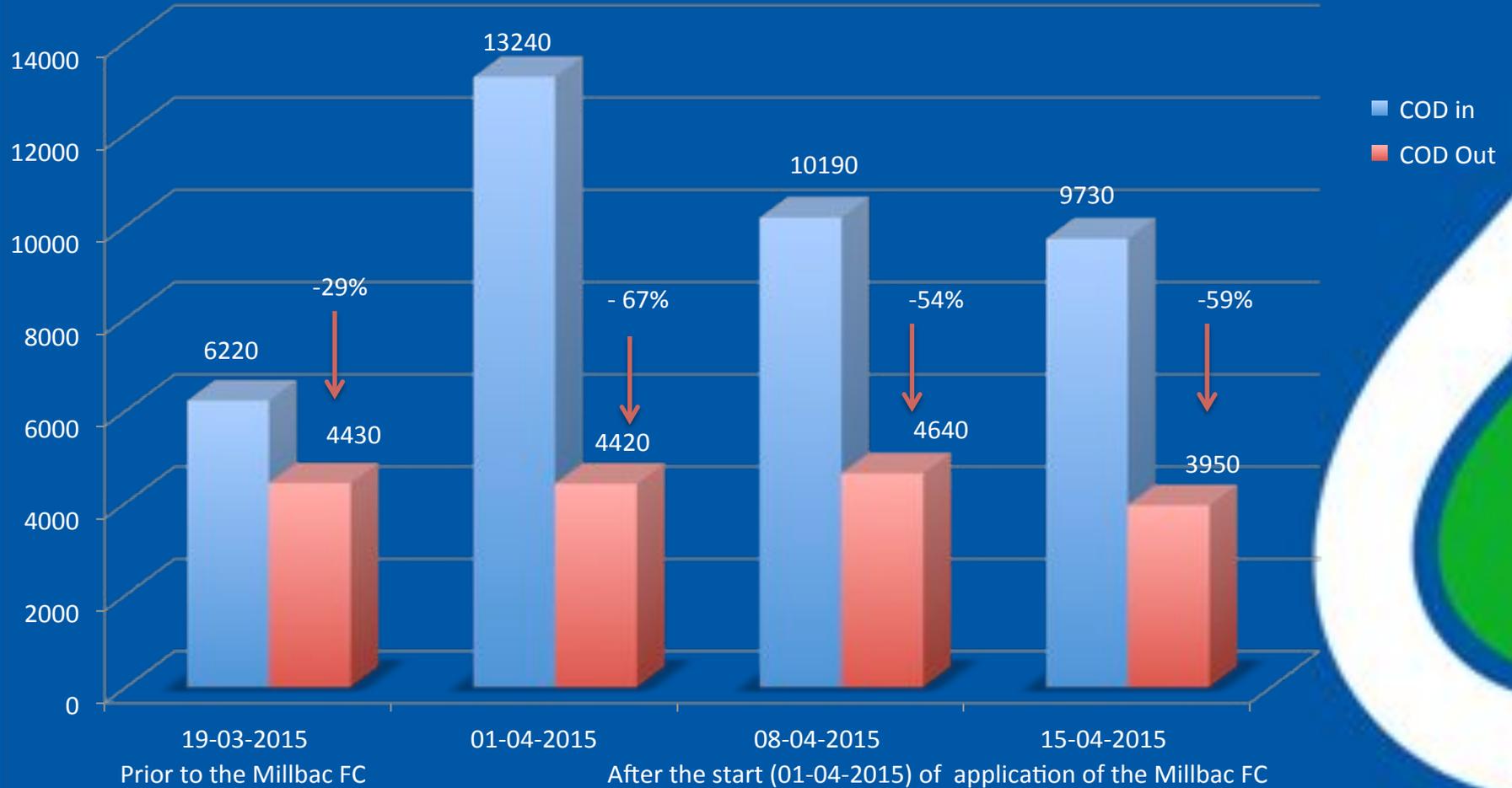
- Lab test using the Millbac FC showed promising improvements in the removal of solids through flocculation.



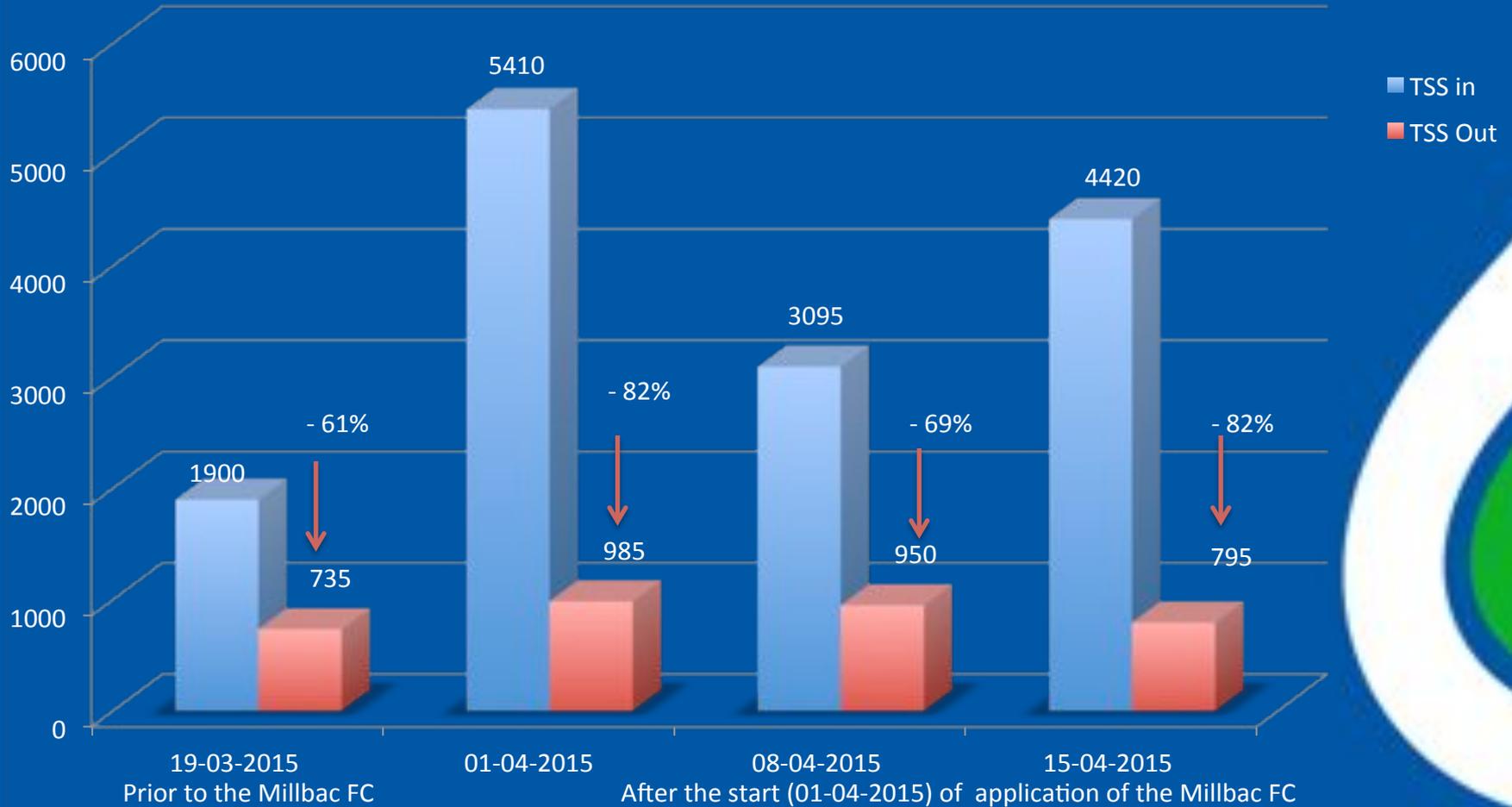
With the addition of the Millbac FC

Before the addition of the Millbac FC

Removal of the COD's from Inlet to outlet over 4 weeks. These results show the improvement after the addition of the Millbac FC and Millbac FP.



Removal of the Total Suspended Solids from Inlet to outlet over 4 weeks. These results show the improvement after the addition of the Millbac FC and Millbac FP.



In order to validate the synergistic effect of the Millbac FC and FP, we stopped the delivery of the Millbac FC into the clarifier.

The follow results show the effect on the system. The Millbac FC was stopped for a period of two weeks from the 28th April, and restarted on the 13th May.

We can see in the start that the COD still come down slightly, however the TSS increases over the 2 weeks.

We can also see that after the Millbac FC was reintroduced, that within a week we could see the improvements return to the results.

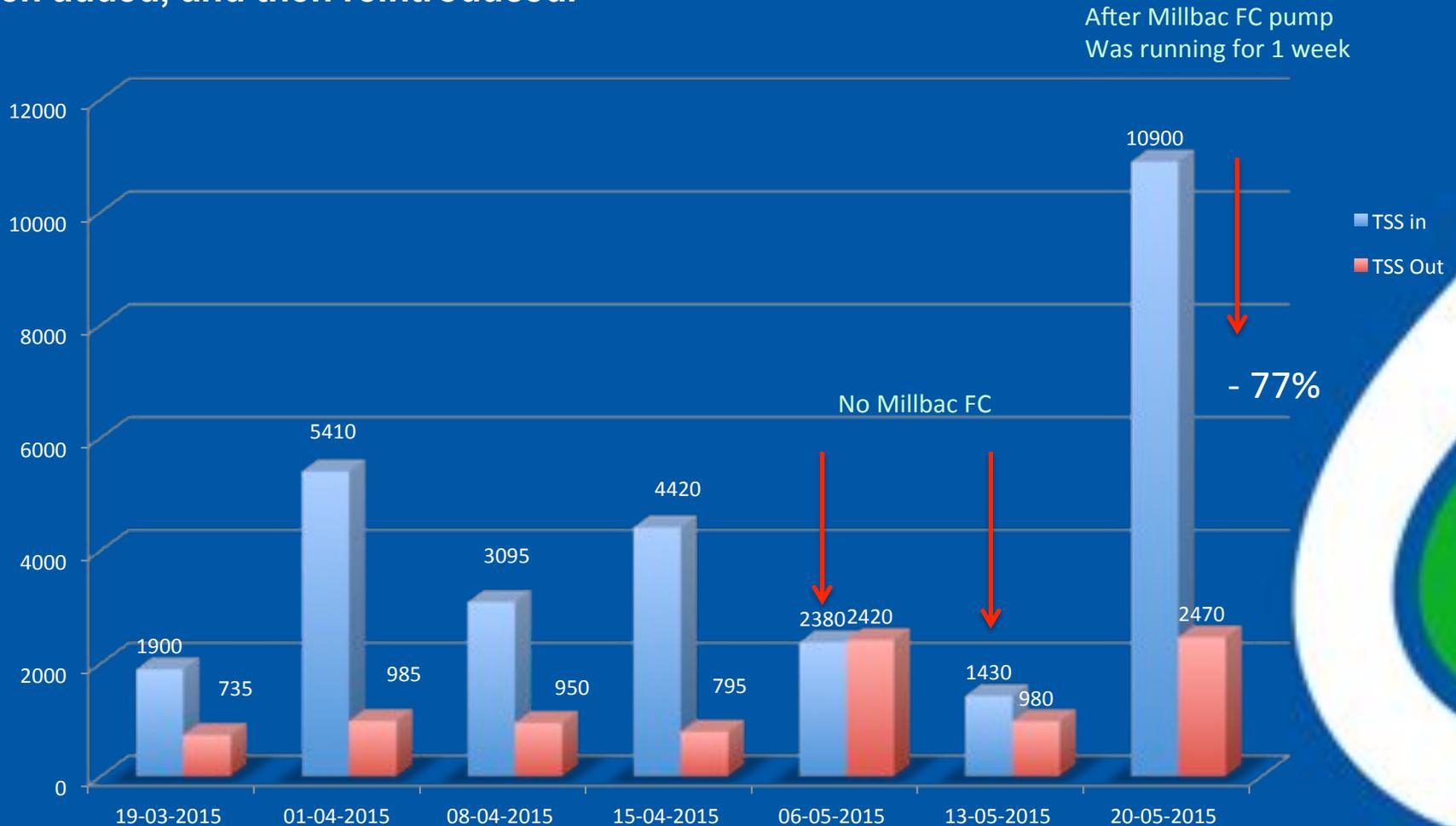
Therefore we can conclude that the Millbac FP, works well to reduce the COD's, and the Millbac FC helps to specifically reduce the TSS. Therefore the combination is having a synergistic effect.

Here are the results on the COD, during the period that the Millbac FC was not been added, and then reintroduced.



We are also confident that the COD values would come Down further as the Decanter was also not running. Since we are seeing a 41% drop with only the additional of our products

Here are the results on the TSS, during the period that the Millbac FC was not been added, and then reintroduced.



We are also confident that the TSS values would come Down further with the Decanter running. Since we are seeing a 71% drop with only the additional of our products

Before Treatment



After Treatment



Before Treatment



After Treatment



Conclusion

We have been able to demonstrate that there is a significant improvement in the results when combining the Millbac FC with the other products in our system.

Once the decanter is operational, or the sludge is removed on a more frequent basis we expect these results to improve

We believe that this will have a positive impact on both the COD and TSS readings.

Considering that these results have been achieved with only the use of a Clarifier, processing Approx 2 mega/L of waste per day. That we have had a significant impact on the performance of the plant. With additional retention time, through the application of Aeration ponds and settling ponds, we would anticipate that further improvements could be expected.