

## **Abstract**

ROWLAND, Philip, HAYNES, Carlton, Moane, Robert, Howe\*, Robert W. Wissington Sugar Factory, College Rd, Stoke Ferry, Kings Lynn, Norfolk, PE339QG. **The Drive for Cossette Perfection.** It is often said that the efficient manufacture of sugar from sugar beet all starts with cossette quality. Of course theoretically that is correct but in reality when you look at process efficiency it is fundamental pre-requisite. It is well known and researched that differences in the quality of cossettes can affect extraction losses, pulp pressing, energy and purification performance. Anyone who has worked in or managed beet sugar factory operations will have an opinion on what makes a good cossette and what good cossette quality should look like. Recognising this challenge, during the 2015/16 Campaign British Sugar, Wissington Factory embarked on a project to improve cossette quality. The initial problem statement was focussed around reducing energy usage through draft reduction, however this project would be just as relevant for identifying extraction benefits by means of changes to diffusion losses. It became apparent that cossette quality was extremely variable and also difficult to measure with any degree of accuracy. Lean Sigma tools and techniques were utilised to improve measurement systems, with a particular focus on slicer maintenance and setup, knife sharpening quality, Autowrench setup and knife position. This paper discusses the work that has been carried out in this area. As well as reducing variation in our measurement system, we have also introduced some additional KPIs that are helping us to better understand process interactions. These include cossette cross-sectional score to understand cossette 'V' formation, measurement to estimate average cossette length, monitoring of 74° fraising thickness of re-sharpened knives. Towards the end of the 2015/16 Campaign confidence in the data collected allowed for more aggressive slicer settings, and ultimately realised a 4% drop in draft ratio across the three diffusion streams during this period. Although difficult to measure in such a complex process, we now feel that we have a process in place to effectively monitor and adjust our settings based on simple statistical process control.