

PRODUCE CONSISTENT HIGH-QUALITY MOZZARELLA



In-line analysis of mozzarella cheese for control of moisture content. simultaneous measurement of fat and salt.

Introduction

The production of Mozzarella entails the cooking and stretching (kneading) of the cheese curd. This is done in the appropriately named “Cooker/Stretcher”. The cooking/stretching is done in hot water. The temperature of the cooker affects the amount of retained moisture in the cheese. After cooking, the cheese is formed into blocks, ribbons or shredded. It then goes into a cool brine vessel for cooling and salting.

Challenge

The typical method for controlling moisture is to collect samples exiting the cooker and taken to the lab and tested. Collecting a good representative sample is difficult as the moisture/water is released from the product when cutting it. Very much care must be taken to obtain a good representation of moisture in the product.



ProSpect real time in-line analysis



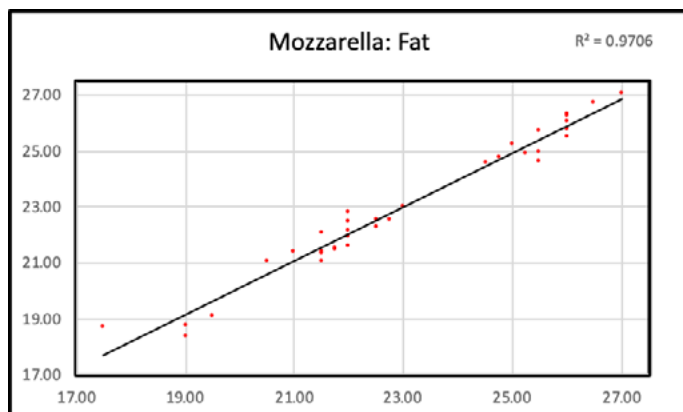
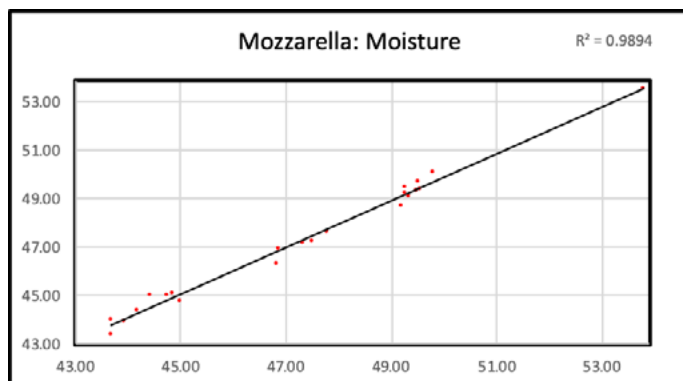
PROSPECT IN-LINE PROCESS BENEFITS

Solution

The ProSpect In-line Process NIR provides continuous output of precise and accurate analytical results for Moisture and Fat. When making this measurement directly in the process, a more representative result for moisture is obtained. This results in operating the process consistently closer to target specifications.

MOZZARELLA ANALYSIS STATISTICS			
	Range	SEP	R ²
Moisture	43 - 54%	0.29%	0.9894
Fat	17 - 27.5%	0.42%	0.9706

- R² = The correlation between the lab reference value and the ProSpect predicted value
- SEP = Standard Error of Prediction or Performance. This is the Standard Error of differences between ProSpect Predicted and Lab Reference Value.



Benefit

The ProSpect in-line process analyzer's proven performance demonstrates the advantage of real time analysis for quality process control. With this performance, the operator has the ability to move the product moisture content closer to specification. The customer can then realize a rapid return on investment, typically < 12 months and continuing overall profit.

- Optimize the Moisture content of Mozzarella with rapid non-destructive in-line analysis.
- Maintain complete control of the Moisture content in the Mozzarella cooking/stretching process with the ProSpect in-line process analyzer.

The ProSpect is a fully integrated system with:

- Built-in process computer with touch screen interface
- Built-in PLC which includes bi-lateral communication to the plant PLC.
 - Output of analytical results to the plant PLC via ethernet or analogue
 - Input of production signal from the plant PLC to automatically select the product that is in production
- Built-in power conditioning
- Built-in air-conditioned temperature control
- Insensitive to vibration
- Ethernet ready
- Self-diagnostics
- All housed in a NEMA 4X environmental enclosure
 - Wash down ready
- 3A compliant CIP measurement flow cell with NIR energy transmitted through fiber-optic bundles.

