

CEM Corporation

Increased Cream Savings in Ice Cream Production

Ice cream producers are constantly developing ways to stay ahead of the market with new flavors, packaging, and healthy alternatives to reach more customers. One of the easiest ways to increase profits is to improve process control through more accurate fat testing equipment. With cream as the primary ingredient, and one of the most expensive, finding ways to reduce daily cream use, while still manufacturing a quality product, is critical to keeping costs down. Even better is using equipment that can not only test incoming milk and cream, but can also test in-process ice cream mixes, additives, finished flavorings, and any other sample at every stage of production. The ORACLE™ is capable of providing solids and fat results for these products and more, all without the hassle and cost of recalibration, frequent maintenance, and service issues, such as tubes clogging or requiring dilutions. Using AOAC approved methods, the ORACLE is able to provide the most accurate results for a rapid analyzer, saving hundreds of thousands of dollars a year in production costs.



Table 1: Accuracy of ORACLE Fat Results Compared to Mojonnier Chemical Reference Results

Sample	ORACLE Result	ORACLE St Dev	Mojonnier Result
Vanilla Ice Cream	10.09	0.04	10.16
Fudge Ice Cream	0.59	0.08	0.66
Chocolate Mousse	15.09	0.04	15.05
Low Fat Cream	9.35	0.01	9.39
High Fat Cream	42.46	0.08	42.53
Strawberry Low Fat Mix	2.37	0.03	2.36

Key Benefits

- No method development or calibration required
- Rapid analysis of fat content in 30 seconds
- AOAC approved technology
- Better reproducibility than reference techniques

Results and Discussion

The accuracy and precision of the ORACLE for quantifying fat in ice cream samples is illustrated in Table 1. Table 1 shows the difference between The ORACLE and mojonnier chemical analysis. Standard deviation

calculations are based on five replicates. These results illustrate the ability of the ORACLE to reliably match reference chemistry results for a wide range of in-process and finished ice cream types with excellent precision.

Conclusion

Using the ORACLE, fat values were obtained in 30 seconds with accuracy that matches reference chemistry. Ultimately, the ORACLE provides highly accurate and precise results allowing for better process control and increased savings for improved plant profitability.