

BIOIONIX™
a more perfect solution

APPLICATION CASE STUDY

Cheese Brine Case Study
Aerobic Plate Count (APC) Reduction in Recirculated Cheese Brine

KEY IMPLICATIONS

Elevated APC levels in cheese brines can indicate high microbial loading, excessive organic buildup, and unstable sanitation conditions. Uncontrolled microbial populations can contribute to spoilage pressure, reduced shelf life, flavor variability, and inconsistent cheese quality. The rapid reduction and stabilization of APC levels demonstrates the effectiveness of continuous ORP-controlled electrochemical treatment in maintaining brine hygiene.

OPERATIONAL BENEFITS

- **Cleaner brine** conditions
- Reduced spoilage organism pressure
- Improved **flavor consistency**
- Reduced slime and organic buildup
- Longer brine life
- Improved **shelf life**
- More consistent mozzarella and string cheese functionality

CONCLUSION

This case study demonstrates that continuous ORP-controlled electrochemical treatment can rapidly reduce APC levels and stabilize microbial conditions within recirculated cheese brines. The resulting reduction in microbial variability supports improved product consistency and operational control.

CHALLENGE

A cheese producer experienced elevated aerobic plate count (APC) levels and inconsistent brine sanitation performance within a recirculated cheese brine system. The BIOIONIX Cheese Brine Treatment system was installed in May to improve microbial stability and overall brine consistency.

OBSERVED RESULTS

- Average APC counts prior to implementation were approximately 29,000 cfu/mL.
- Following startup, APC counts declined substantially.
- On May 19, the ORP target was increased to optimize treatment performance.
- APC levels dropped from approximately 10,000 cfu/mL to 360 cfu/mL.
- This represented approximately a 96% reduction in APC.
- The system maintained stable low APC levels after optimization.

APC DATA SET

