

Detection of Fermentation Contaminants by Scorpions vs. Acetic Acid Production

Early detection and identification of contaminant microbes can improve profitability

- antimicrobial treatments are more effective when used against low numbers of target organisms and when the appropriate antimicrobial treatment is applied
- lower operating costs by reducing amounts of antimicrobial agents applied
- prevent inhibition of yeast from byproducts of bacterial growth, increasing yield and decreasing time in process
- reduce feedstock loss to contaminant microbes

Detection of contaminant microbes in biofuel fermentations is often done by looking for the presence of metabolic compounds the microbes produce, such as acetic acid and lactic acid. Although these methods can be useful, by the time the metabolites are detected, the contaminant population is usually large and growing rapidly.

In a series of trials conducted in our laboratory we detected the presence of acetic acid 36 hours after the fermentations had been inoculated with 10,000 cells per mL of Lactobacillus. At this time point, the population of these contaminant microbes was in excess of three million cells/mL.

ETS Scorpion Diagnostics can detect and identify these spoilage microbes at less than 100 cells/mL, providing greater sensitivity and earlier detection of the contaminants. Early detection, identification and intervention will improve fermentation performance.

Acetic Acid Production in Fermentations Contaminated with Lactobacillus

