

# COLDBLOCK IN THE AGRICULTURE SECTOR

Accurate and Efficient  
Digestion of  
Agricultural Samples  
with ColdBlock

Sample digestion is an integral part of understanding the health and composition of plants and soil in our environment. Healthy soil is required to allow food and plants to grow and flourish.

The ColdBlock R&D Laboratory team recently conducted a series of agricultural sample digestions using ColdBlock™ Digestion Pro Series Technology to demonstrate the effectiveness and efficiency of this technology when compared to industry standards.

Agricultural sample digestion using ColdBlock is an effective and accurate way to uncover essential information about nutrient availability, soil health, and the existence of contaminants.

# THE RESULTS

## ACCURACY AND REPEATABILITY

Recoveries for all sample types accurately match industry CRMs.

## SPEED

Digestions using ColdBlock are completed in 20-30 minutes.

## EFFICIENCY

Fewer steps are required in comparison to traditional methods.

## SAVINGS

All of these benefits translate into meaningful cost savings for labs/companies.

## APP NOTES SUMMARY

Recoveries achieved using acid digestion methods were well-within the range of acceptable values identified in the CRMs.

### EnviroMAT – SS-1 Contaminated Soil

Equipment: ColdBlock CBM (with quartz test tubes), chiller, ICP-MS & ICP-OES  
Published: July 2024  
Digestion Time: 30 Minutes  
Acid Used: HNO<sub>3</sub> & HCl

### NIST 1575a – Trace Elements in Pine Needles

Equipment: ColdBlock CBM (with quartz test tubes), chiller, ICP-MS  
Published: July 2024  
Digestion Time: 20 Minutes  
Acid Used: HNO<sub>3</sub> & H<sub>2</sub>O<sub>2</sub>

### NIST 1515 – Apple Leaves

Equipment: ColdBlock CBM (with quartz test tubes), chiller, ICP-MS & ICP-OES  
Published: July 2024  
Digestion Time: 20 Minutes  
Acid Used: HNO<sub>3</sub> & H<sub>2</sub>O<sub>2</sub>

### NIST 1573a – Tomato Leaves

Equipment: ColdBlock CBM (with quartz test tubes), chiller, ICP-MS & ICP-OES  
Published: July 2024  
Digestion Time: 20 Minutes  
Acid Used: HNO<sub>3</sub> & H<sub>2</sub>O<sub>2</sub>



For full details, including methodology and results achieved, and a full list of App Notes published by the ColdBlock R&D Lab, visit [ColdBlock.ca/resources](https://ColdBlock.ca/resources).