Pathogens of Concern in Cannabis

Aspergillus

Cat. no. **W89**

ATCC 16404

Aspergillus has four main species of concern: *A. niger*, *A. flavus*, *A. terreus*, and *A. fumigatus*. Many state regulations require testing for *Aspergillus* but only a few require speciation of the "Big Four."

Salmonella

Cat. no. **G309**

ATCC 14028
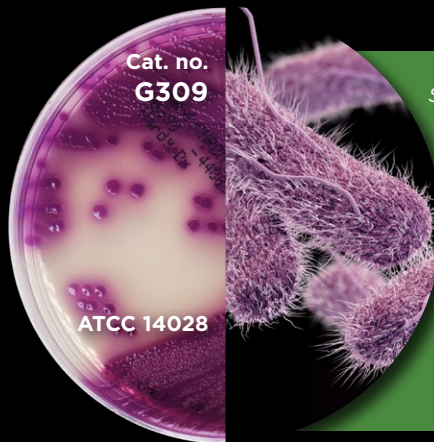
A run in with *Salmonella* can result in food poisoning symptoms and severe dehydration. Some serotypes of Salmonella *enterica* are the cause of the life-threatening illness Typhoid fever.

E. coli

Cat. no. **G305**

ATCC 35150
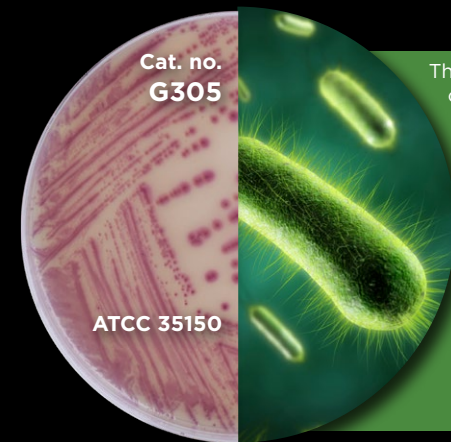
The presence of *E. coli* on cannabis product has been confirmed by several independent testing labs. Finding *E. coli* in both raw flower products as well as edibles is a major concern.

Penicillium

Cat. no. **W70**

ATCC 11709
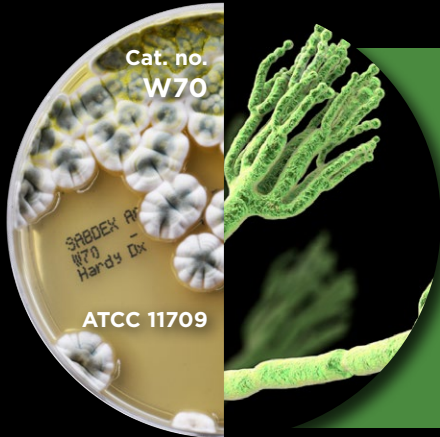
Members of this mold genus are pathogenic and known mycotoxin producers. The most important mycotoxins from *Penicillium* are ochratoxin A (OTA) and patulin.

Listeria

Cat. no. **G317**

ATCC 15313

Listeria can be found in water and soil, both of which are necessary when cultivating cannabis. *Listeria* is a very common pathogen of concern in food testing and is carefully screened for in many food processing plants.

S. aureus

Cat. no. **G311**

ATCC 25923
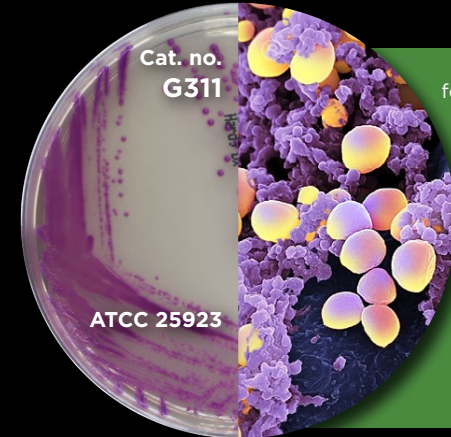
Staphylococcus as a foodborne illness has been documented to be on the rise. Infections from this bacteria can cause severe food poisoning and gastro-intestinal illness.

Mucor

Cat. no. **W80**

ATCC 42647
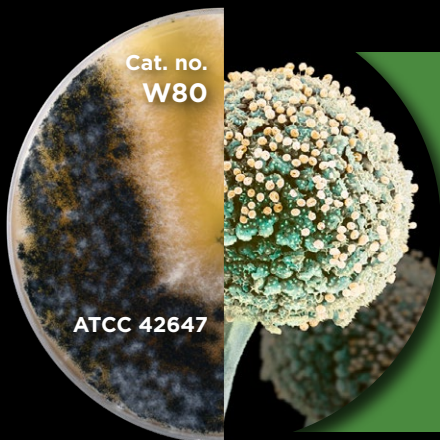
The strains of Mucorales that have the potential to cause disease are most often of the genera *Rhizopus*, *Mucor*, and *Rhizomuco*.

P. aeruginosa

Cat. no. **G145**

ATCC 27853

P. aeruginosa is a pathogen that thrives in moist soil, plants, and water. A cannabis cultivation facility provides the ideal conditions for proliferation of this dangerous organism.

The Hardy Advantage

Hardy Diagnostics manufactures and distributes thousands of products and is always looking ahead to make sure our laboratory partners have the products they need!

Basic Cannabis Microbiology Workflow

1. Sample Prep

Introduce your sample to primary dilution. BPW and Butterfields are common diluents in the cannabis testing lab. Use a membrane filter bag to reduce particulates on your sample.

Membrane Flter Bag
Cat. no. 121025

2. Homogenize

Automate and standardize samples by placing prepared filter bag in a homogenizer. Commonly used in the food industry for reliable sample prep, this equipment helps bring standardization to your method.

BagMixer® 100 MiniMix®
Cat. no. 100WCC

3. Serial Dilution

For clean and readable plates, introduce serial dilution to your process. Often serial dilution is helpful for cannabis labs running Total Yeast /Mold plates.

Dilushaker
Cat. no. 40DS21PRXT

Picus® Electronic Pipette
Cat. no. 735111

4. Plating

Agar

After dilution, inoculate traditional agar plates for the isolation of organisms. Many labs prefer chromogenic media and find that these plates are the perfect partner for confirmation when using genetic technology or other rapid methods.

Tryptic Soy Agar, USP
Cat. no. G60

CompactDry™

An easy to use and affordable screening or confirmatory method. CompactDry™ is perfectly suited to detect the major pathogens of concern in cannabis. The cassette design allows for natural growth of molds, keeping fungal structures intact for ease of microscopic identification.

AOAC INTERNATIONAL

5. Results

The Wizard™ CompactDry™ automated plate reader will digitize plate images, perform colony counts, read chromogenic results and organize data. Reads plates in seconds, saving technicians time and eliminating human error.

Wizard™ Reader
Cat. no. CDR1

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