

# Dextrose Tryptone Agar

## Intended Use

Dextrose Tryptone Agar is used for cultivating thermophilic “flat-sour” microorganisms associated with food spoilage.

## Summary and Explanation

In the 1930s, the National Canners Association specified the use of Dextrose Tryptone Agar for isolating “flat sour” organisms from food products.<sup>1</sup> “Flat sour” spoilage of canned foods is caused by *Bacillus coagulans* (*Bacillus thermoacidurans*). Bacterial growth results in a 0.3-0.5 drop in pH, while the ends of the can remain flat. *B. coagulans* is a soil microorganism that can be found in canned tomato products and dairy products. Conditions favorable for multiplication of the bacterium can result in spoilage of the food product.<sup>2</sup>

Dextrose Tryptone Agar can also be used to isolate other food spoilage bacteria: mesophilic aerobic spore formers in the genera *Bacillus* and *Sporolactobacillus* and thermophilic flat sour spore formers such as *B. stearothermophilus*.<sup>2</sup>

## Principles of the Procedure

Dextrose Tryptone Agar contains peptones to provide carbon and nitrogen sources for general growth requirements. Dextrose is the carbohydrate source. Bromcresol purple is the pH indicator. Agar is the solidifying agent.

## Formula

### Difco™ Dextrose Tryptone Agar

Approximate Formula\* Per Liter

Tryptone .....	8.0	g
Peptone .....	2.0	g
Dextrose .....	5.0	g
Agar .....	15.0	g
Bromcresol Purple .....	0.04	g

\*Adjusted and/or supplemented as required to meet performance criteria.

## User Quality Control

### Identity Specifications

#### Difco™ Dextrose Tryptone Agar

Dehydrated Appearance: Light, greenish-beige, free-flowing, homogeneous.

Solution: 3.0% solution, soluble in purified water upon boiling. Solution is purple, slightly opalescent.

Prepared Appearance: Purple, slightly opalescent without significant precipitate.

Reaction of 3.0% Solution at 25°C: pH 6.7 ± 0.2

### Cultural Response

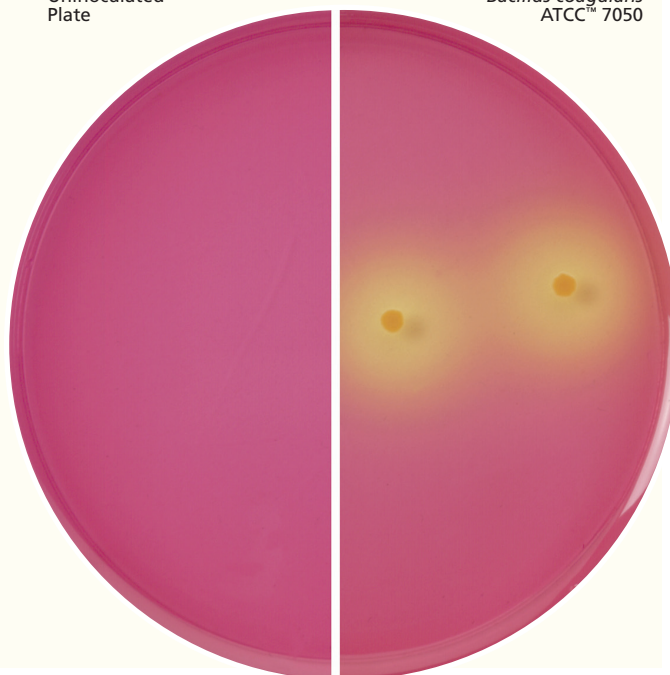
#### Difco™ Dextrose Tryptone Agar

Prepare the medium per label directions. Inoculate plates by the pour plate method and incubate at 55 ± 2°C for 40-48 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	DEXTROSE FERMENTATION
<i>Bacillus coagulans</i>	7050	10 <sup>2</sup> -10 <sup>3</sup>	Good	+ (yellow)
<i>Bacillus stearothermophilus</i>	7953	10 <sup>2</sup> -10 <sup>3</sup>	Good	+ (yellow)

Uninoculated Plate

*Bacillus coagulans*  
ATCC™ 7050



## Directions for Preparation from Dehydrated Product

1. Suspend 30 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. Test samples of the finished product for performance using stable, typical control cultures.

## Procedure

See appropriate references for specific procedures.

## Expected Results

A change in the color of the medium from purple to yellow indicates dextrose fermentation.

## References

1. National Canners Association. 1933. Bacterial standards for sugar.
2. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

## Availability

### Difco™ Dextrose Tryptone Agar

COMPF

Cat. No. 280100 Dehydrated – 500 g