

Dextrose Tryptone Agar, DTA (i23054)

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

Industry: Food

Principles & Uses

Canned foods are highly susceptible to flat-sour spoilage, often caused by mesophilic or thermophilic aerobic spore-formers. Inadequate heat processing, particularly against the moderately heat-resistant spores of mesophilic bacteria and *Bacillus stearothermophilus*, contributes to this spoilage. *Bacillus coagulans*, a soil organism, is commonly isolated from flat-sour spoilage in canned tomato and dairy products, where carbohydrate fermentation produces lower fatty acids, souring the product without significant gas production.

For the detection and enumeration of thermophilic flat-sour spoilage organisms, Dextrose Tryptone Agar formulated by Williams is recommended. This medium, also useful for mesophiles and thermophiles in various food products.

Tryptone supplies amino acids, nitrogen, carbon, minerals, and vitamins, while dextrose acts as the carbohydrate source. Bromocresol purple serves as a pH indicator, and agar solidifies the medium. Incubation conditions vary based on the investigation's purpose, such as 32°C for 72 hours for Mesophiles and 55°C for 48 hours for Thermophiles.

Composition (gr/L)

Tryptone 10 g, Dextrose 5 g, Bromocresol Purple 0.04 g, Agar 15 g.

Final pH at 25°C 6.7 ± 0.2

Preparation from dehydrated Powder

Suspend 30 g of the powder in one liter of distilled water. Heat until the powder is completely solved. Autoclave at 121°C for 15 minutes.

Quality Control

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

Prepared Appearance: Purple, slightly opalescent without significant precipitate.

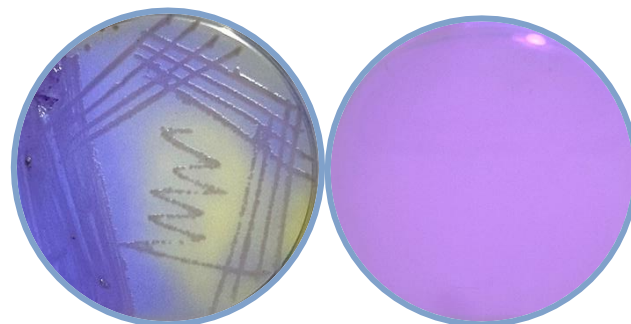
Reaction of 3.0% Solution at 25°C: pH 6.7 ± 0.2

Cultural Response

Cultural response was observed after incubation at 55 ± 2°C for 40-48 hours.

Organism (ATCC*)	Recovery	Dextrose Fermentation
<i>Bacillus stearothermophilus</i> (12980)	Good	+ (yellow)
<i>Bacillus coagulans</i> (7050)	Good	+ (yellow)

*ATCC is a registered trade mark of the American Type Culture Collection.



Bacillus stearothermophilus (left). Prepared Culture Media (right).

Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.