CompactDry™ CF Interpretation Guide

CompactDry™ International Certifications Approved



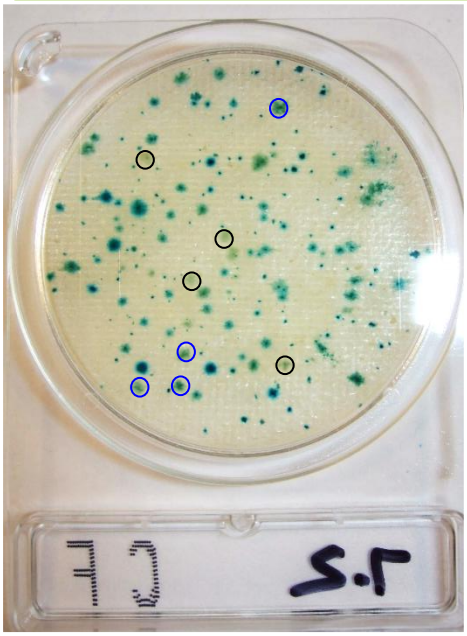
CompactDry CF
CF : Coliform Count
Certification : AOAC-PTM, MicroVal, NordVal

[Features]
Coliform bacteria form blue to blue-green colonies through the chromogenic substrate X-GAL.

[Interpretation]
Incubation temperature 35±1℃(raw meat products) or 37±1℃(all other matrices)
Incubation time 24±2hours

Coliforms, using β-galactosidase, hydrolyze the chromogenic substrate X-GAL (5-bromo-4-chloro-3-indolyl-β-D-galactopyranoside) to produce a blue pigment, forming blue to blue-green colonies. Most other bacteria are inhibited or, if they grow, form white colonies (e.g., Gram-negative rods).

Interpretation based on colony color and morphology



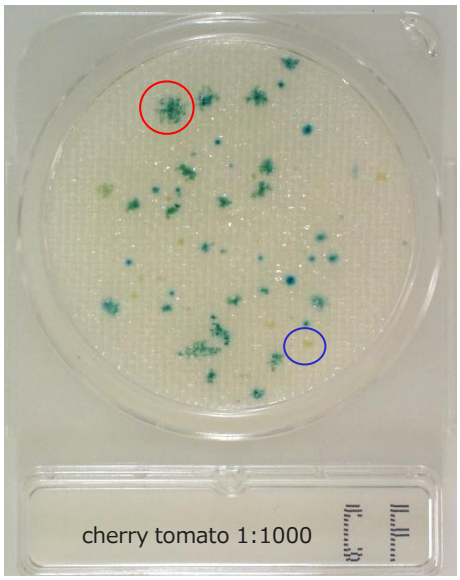
Q. Should the light green colonies indicated by the black circles be interpreted as coliform colonies? A. Yes. Coliforms hydrolyze the chromogenic substrate X-Gal and produce blue to bluish-green colonies. Therefore, the light green colonies shown in the image should be interpreted as coliform colonies.

Q. Should the dark green colonies indicated by the blue circles be interpreted as coliform colonies?
A. Yes. The dark green colonies should be interpreted as coliform colonies. For confirmation, the colonies may be picked and inoculated onto a differential medium for coliforms, such as Desoxycholate Agar.



Q. How should a colony showing diffused blue coloration be interpreted?
A. A colony exhibiting a distinct, pinpoint circular blue coloration, as well as a colony showing diffused blue coloration, should be interpreted as a coliform colony.

Q. A yellow colony is observed. How should it be interpreted?
A. The yellow colony is likely colored by the microorganism itself. As it does not exhibit the blue coloration resulting from the X-Gal reaction, it should not be counted.



Q. Colorless colonies grew on CompactDry CF. Are these microorganisms other than coliforms?
A. Yes. These are examples of the growth of non-coliform microorganisms (Pseudomonas aeruginosa). Coliforms react with X-Gal in CompactDry CF and form blue to bluish-green colonies, whereas non-coliform microorganisms generally form colorless colonies.

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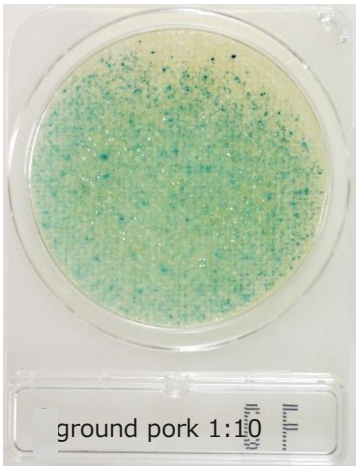
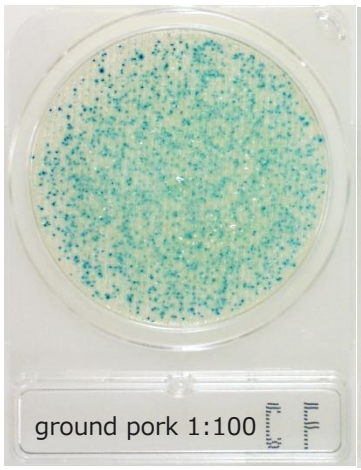
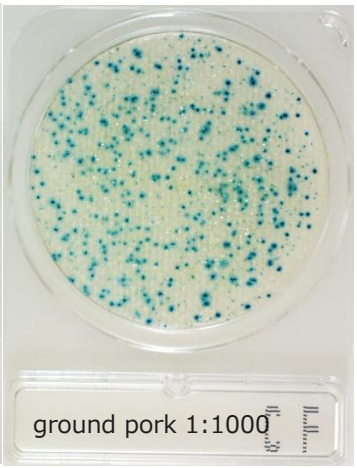
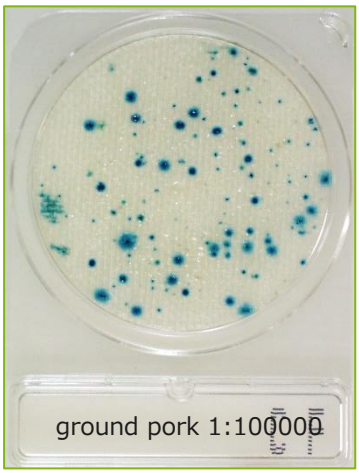
Improved Interpretation through Dilution

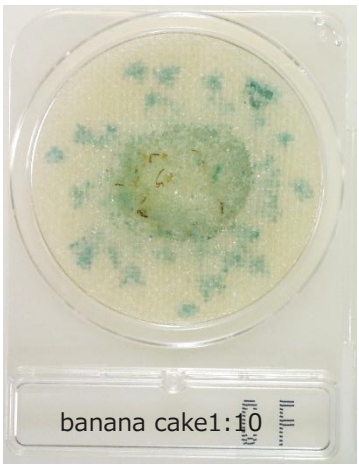








Tip When the bacterial count exceeds 10,000 colonies per plate, colonies may not form individually and the entire sheet may become colored. Interpretation may also be difficult due to the influence of the sample. In these cases, perform an additional 10-fold dilution of the sample and examine multiple dilution levels to facilitate interpretation.





Q. A banana cake sample was tested on CompactDry CF. How should the colonies be counted?
A. The blue area in the center is the trace of the inoculated sample. When a highly viscous sample such as banana cake is inoculated, the sample suspension does not spread throughout the entire plate. The somewhat spread blue colonies observed around the sample trace should be counted as coliform colonies. Further dilution of the sample by a factor of ten may result in clearer colony formation and facilitate interpretation.



Q. When a diluted chicken liver sample was inoculated onto CompactDry CF, the entire plate turned blue. Can this be interpreted as TNTC (Too Numerous To Count)?
A. It cannot be determined whether this coloration is caused by enzymes present in the animal liver or by TNTC. In such cases, the sample should be further diluted and tested to reduce the influence of the sample and to confirm whether colony growth can be observed.



Q. When a diluted yogurt sample was inoculated onto CompactDry CF, the entire sheet became colored. Can this be interpreted as TNTC?
A. Yogurt contains approximately 10^8 CFU/g of lactic acid bacteria, and the β-galactosidase from these bacteria is considered to have caused coloration of the entire sheet.

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