



Set yogurt

Recipe recommendation

Type of technology

Set yogurt

Source of milk

High-quality milk

Culture

YoFlex® range

Characteristics

Set yogurt is defined as a fermented milk product whose fermentation and coagulation take place in cups. Set yogurt can be made using different combinations of fat and dry matter and different DVS® cultures, depending on the characteristics desired in the final product. Yogurt cultures are comprised of symbiotic combinations of *Streptococcus thermophilus* and *Lactobacillus delbrueckii ssp. bulgaricus* strains. Depending on local regulations and the definition of yogurt in a given market, yogurt cultures may also include other lactic acid bacteria and/or probiotic bacteria.

Frozen DVS® culture recommendations

Flavor and acidity	Texture profile	Culture name
Low yogurt flavor, low acidity	Medium texture	Mild 2.0
Medium yogurt flavor, low acidity	High texture	Premium 3.0, Premium 8
High yogurt flavor, medium acidity	Medium to high texture	YF-L901, Express 1.0, SoBulgarian 2.0
Very high yogurt flavor, medium to high acidity	high texture	TR-800, TR-801
Very high yogurt flavor, medium to high acidity	Medium texture	YF-L706 YF 3331

Freeze-dried DVS® culture recommendations

Flavor and acidity	Texture profile	Culture name
Low yogurt flavor, low acidity	Medium to High texture	Mild 1.0, Premium 5.0
Low yogurt flavor, low acidity	Medium texture	KeepIt 1.0
Medium yoghurt flavor, low to medium acidity	Low to medium texture	Express 1.0, YF-L812
High yogurt flavor, medium to high acidity	Medium to high texture	YF-L903, Premium 6.0, YC-X16
Medium yoghurt flavor, low to medium acidity	Medium to High texture	Express 6, Express 7


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Steps


Description

Milk



The milk should be of high quality and not contain any inhibitory agents such as antibiotics. The fat and solids non-fat(SNF) should be standardized to the desired level. Producers may opt to modify texture and flavor by adding other ingredients, such as starch (0.5-1.75%), sugars, sweeteners, etc.


Fortification



To optimize the texture of the product, it is common to standardize the protein content to approximately 3.5-4.5%. The following methods can be used for this:


- Addition of milk powders, such as skim milk powder (SMP), whey protein concentrate (WPC), milk protein concentrate (MPC), and other high-protein powders made from UF retentate and/or casein.
- Evaporation
- Ultra-filtration (UF)

Hydration




If milk powders are used, hydration should be considered, e.g. 6-8° C (43-46°F) for 1-3 hours or as advised by the powder supplier.

De-aeration




We recommended to deaerate in order to lower the oxygen content. This may improve the quality of the yogurt and shorten the fermentation time.

Homogenization




Homogenization is typically carried out at 60-70°C (140-158°F) at a pressure of 150-200 bar (2,175-2,900 psi) for the first stage and at a pressure of 30-40 bar (435-580 psi) for the second stage.

Heat treatment



The milk is heated through HTST to 95°C (203°F) for 5 min; vat pasteurization 85°C (185°F) for 30 min; milk is then cooled to holding temperature, i.e. 5-10°C (41-50°F).

Culture



The choice of culture influences characteristics of the final product including flavor, acidity, texture and appearance. The primary characteristics of the YoFlex® cultures are described in the YoFlex® Product Range brochure. For the production of set yogurt, a yogurt culture that produces high proportions of exopolysaccharides (EPS) is generally recommended for producing a yogurt with high texture. EPS is produced by many lactic acid bacteria cultures during fermentation, and numerous studies have shown that EPS significantly improves properties such as mouth thickness and appearance.


Inoculation



The culture is taken out from the freezer just prior to use. The package is disinfected prior to opening. After opening, the culture is poured into the cold milk. The mixture is agitated slowly for 10-15 minutes to distribute the culture evenly.


Amount of milk to be inoculated	250 l/ 66 gal	1,000 l/ 264 gal	2,500 l/ 660 gal	5,000 l/ 1,320 gal	10,000 l/ 2,640 gal
Amount of DVS® culture	50 U	200 U	500 U	1,000 U	2,000 U

Heating




The cold inoculated milk is heated through heat exchanger to 43°C (109°F).

Filling and Flavoring




The heated inoculated milk is filled in cups. Flavor may be added at this step. Cups are sealed and placed in the incubator to the recommended fermentation temperature 43°C (109°F).

Fermentation



The cups are left undisturbed until reaching cut pH of 4.60-4.55.

Cooling and storage



The product is gently placed in a cold store at approximately 4-8°C (39-46°F).

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