Set Sour Cream - eXact ®

Direct fermentation recipe

Type of technology	Set sour cream
Source of milk	High quality milk and cream is used
Culture	eXact® range
Description	Set sour cream is typically made by fermentation of cream with mesophilic cultures. Sour cream has a smooth and viscous texture and a mild flavor. Depending on the desired flavor (diacetyl), aromatic (LD type) cultures or homofermentative (O-type; O-ST-type) cultures can be used.

Table 1: F-DVS recommendations

Product	Product characteristics	eXact® culture
Traditional sour cream	Sour cream with high mesophilic flavor	CHN-22; CHN-13
Classic sour cream	Sour cream with high mesophilic flavor and high texture	XT-312; XT-313; XT-314; XT-315 DSG-6000-10; 20; 30
Modern sour cream	Sour cream with mesophilic flavor but with very high texture and fast acidification	XPL-1; XPL-2
Mild sour cream	Sour cream with very higher texture, fast acidification and no CO_2 production during fermentation or distribution	XPL-30; XPL-40; XPL-50 NG Flavor+
	Sour cream, fast acidification and no CO_2 production during fermentation or distribution	MO-1; MO-2, MO-3, MO-4 NG Flavor+

Table 2: FD-DVS recommendations

Product	Product characteristics	eXact® culture
Traditional sour cream	Sour cream with high mesophilic flavor	CHN-22
Modern sour cream	Sour cream with mesophilic flavor but with very high texture and fast acidification	XPL-1; XPL-2
Mild sour cream	Sour cream with very higher texture, fast acidification and no CO_2 production during fermentation or distribution	XPL-30; XPL-40

Milk/cream

High quality milk/cream is used. The milk/cream is standardized to the desired fat content and milk-solids-nonfat (MSNF). Sour cream/ creme fraiche can be made with different fat contents typically 6% to 38% fat.

Homogenization

Homogenization is normally carried out at 60-70°C (140-158°F). The pressure used ranges from 100-150 bar (1087-1450 psi) for products with low fat content (e.g. 9%) and around 100 bar (1087 psi) for high fat content (e.g. 38%).

Heat treatment

The milk/cream is heated to 90°C (194°C) for 5 min or 95°C (203°F) for 3 min, or if batch pasteurization is used 85°C (185°F)/30 min, and cooled to incubation temperature, i.e. 21-25°C (70-76°F).
In connection with the heat treatment it is recommended to de-aerate in order to lower the oxygen content. This will shorten the fermentation time of the sour cream.

Culture

For the production of low fat sour cream the cultures mentioned before are recommended. F-DVS XT-312, XT-313 and XT-314 or XPL cultures are especially suitable for low fat products, due to their ability of producing exopolysaccharides (EPS), which result in high texture properties.

Inoculation

The culture is taken out from the freeze just prior to use. The package is disinfected prior to opening. After opening the culture is poured into the 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	1000 l/ 264 gal	2500 l/ 660 gal	5000 l/ 1320 gal	10000 l/ 2640 gal
Amount of DVS ™culture	50 U	200 U	500 U	1000 U	2000 U

Fermentation

The inoculated milk is packed then the incubation is following at 21-25°C (70-76°F) until pH is 4.65-4.55 is recommended. Flavor, aroma, texture, fermentation time and gas formation can be optimized by changing the incubation temperature. The optimal temperature depends on the selected culture as well as the requested product profile. The recommended fermentation temperature for XPL cultures is 30-35°C (86-95°F) to get highest texture and fastest fermentation.

Cooling/Storage

When the final pH is reach and to reduce the post-acidification and to keep the high flavor profile a fast cooling to 5-6°C (41-43°C) is recommended and kept at 4-6°C (39-43°F).

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Probiotics	The nu-trish® range consists of well documented probiotic strains with credible health benefits based on research and strong clinical documentation. Available as single strain probiotics which can be added with the YoFlex® cultures. nu-trish® cultures are also available as ready to use blends for production of Probiotic Stirred Yogurt.
Bioprotection *Keep it great! with FreshQ®*	FreshQ® are natural bioprotective food cultures used as adjunct cultures to the yogurt starter culture. With the use of FreshQ® you can meet a growing demand for natural products and extend your shelf life, without adding artificial preservatives. FreshQ® cultures can help you take control of your yeast and mold risk, lowering your product recalls and consumer complaints. With FreshQ® you can protect your brand by making sure that your product stays the way you made it throughout shelf life, even after it has been opened.

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