



Advisable scheme for independently determination the content of different parameters in milk and its derivatives

When is not possible to use the help of authorized laboratories and above mentioned milk analyzers we recommend you to follow the scheme:

For cow milk (whole milk, low fat, skimmed milk) and UHT milk

Determination of fat content – Gerber's method, described in Appendix Methods.

Density determination – using aerometer, described in Appendix Methods.

SNF determination – by formula

Determination of Lactose content – by formula

Determination of salts content – by formula

Total protein content determination – by formula

Example: *Determination of the quality parameters for two samples cow milk (low fat and high fat), obtained and prepared according.*

First – determine the fat content in the samples, using the Gerber's method.

Suppose that for the first sample the result is 2,0 %F, for the second – 5,9 %F.

Second – determine the milk density, using aerometer.

Suppose that the results are 1,0316 for the first sample and 1,0274 for the second.

Third – Calculate the SNF content using the formula

$$SNF = \frac{0,075 * 2,0 + 100 - 100 / 1,0316}{0,378} = 8,50\%$$

$$SNF = \frac{0,075 * 5,9 + 100 - 100 / 1,0274}{0,378} = 8,23\%$$

Fourth – determine the lactose content by the formula

$$Lact. = SNF * 0,55 = 8.50 * 0.55 = 4.67 \%$$

$$Lact. = SNF * 0,55 = 8.23 * 0.55 = 4.53 \%$$

Fifth – determine the solids content by formula

$$Salts = SNF * 0,083 = 8.50 * 0.083 = 0.71 \%$$

$$Salts = SNF * 0,083 = 8.23 * 0.083 = 0.68 \%$$

Sixth – determine the total protein content by formula

$$Proteins = SNF * 0,367 = 8.50 * 0.367 = 3.12 \%$$

$$Proteins = SNF * 0,367 = 8.23 * 0.367 = 3.02 \%$$

So, when calibrating the milk analyzer we'll use samples with the following parameters:

	<u>I st sample</u> (low fat)	<u>II nd sample</u> (high fat)
milk fat	2,00	5,90
SNF	8,50	8,23
density	1,0316	1,0274
lactose	4,67	4,53
salts	0,71	0,68
proteins	3,12	3,02

For sheep milk

Determination of fat content – Gerber's method, described in Methods

Density determination – using aerometer, described in Methods

SNF determination – by formula

Determination of Lactose content – by formula

Determination of solids/salts content – by formula

Total protein content determination – by formula

Example: Determination of the quality parameters for two samples sheep milk (low fat and high fat), obtained and prepared according.

First – determine the fat content in the samples, using the Gerber’s method

Suppose that for the first sample the result is 5,6 %M, for the second – 9,8 %M.

Second – determine the milk density, using aerometer

Suppose that the results are 1,0352 for the first sample and 1,0300 for the second.

Third – Calculate the SNF content using the formula

$$SNF = \frac{0,075 * 5,6 + 100 - 100/1,0352}{0,378} = 10,11\%$$

$$SNF = \frac{0,075 * 9,8 + 100 - 100/1,0300}{0,378} = 9,65\%$$

Fourth – determine the lactose content by the formula

$$Lact. = SNF * 0,45 = 10.11 * 0.45 = 4.55 \%$$

$$Lact. = SNF * 0,45 = 9.65 * 0.45 = 4.34 \%$$

Fifth – determine the solids content by formula

$$Solids = SNF * 0,075 = 10.11 * 0.075 = 0.76 \%$$

$$Solids. = SNF * 0,075 = 9.65 * 0.075 = 0.72 \%$$

Sixth – determine the total protein content by formula

$$Proteins = SNF * 0,475 = 10.11 * 0.475 = 4.80 \%$$

$$Proteins = SNF * 0,475 = 9.65 * 0.475 = 4.58 \%$$

So, when calibrating the milk analyzer we’ll use samples with the following parameters:

	<u>I st sample</u> (low fat)	<u>II nd sample</u> (high fat)
milk fat	5,60	9,80
SNF	10,11	9,65
density	1,0352	1,0300
lactose	4,55	4,34
salts	0,76	0,72
proteins	4,80	4,58