

**DETERMINATION OF THE PHYSICO-CHEMICAL CECALAIT'S
PROFICIENCY TESTING ASSIGNED VALUES (REFERENCE)**

The physico-chemical proficiency testing data treatment begins by the determination of the assigned value (reference) of each sample of the test. The results of each laboratory are then compared to the assigned values for each sample. Thus, the performance statistics, mean deviation can be calculated (\bar{d}) and standard deviation of deviations (Sd) can be calculated.

To determine the assigned value, a robust algorithm, standardised in the ISO 13528 standard (Algorithm A), is applied. Before that, a selection of laboratories can be realised on the basis of the analytical method used by the laboratory and/or the recovery of pure solutions or control samples.

Many evolutions have been realised concerning the selection of laboratories on the analytical method used. The objective is indeed to ensure the traceability of the assigned values to the existing standardised method for the corresponding criterion.

First, the methods used by the participating laboratories have been identified on the results sheets, and then the process of selection on the basis of the method has been implemented for the calculation of the assigned value.

The tables below present, for each proficiency testing and by criterion, the selection procedures on the basis of methods actually applied within the context of the physico-chemical proficiency testing.

Proficiency testing on whey and retentate are not represented in the tables below. Indeed, as they are more recent, we just now modify the results sheets in order to identify the methods used by the laboratories. A selection of the laboratories on the basis of the methods would then be realised.

PROFICIENCY TESTING ON RAW MILK

Criteria	Calculation procedure of the assigned value
Fat: Gerber method	results of the laboratories using the Gerber method according to NF V 04-210
Fat: Röse-Gottlieb method	results of the laboratories using the Röse-Gottlieb method according to ISO 1211 IDF 1
Protein: Amido black method	results of the laboratories using the Amido black method according to NF V 04-216
Nitrogen: Kjeldahl method	results of the laboratories using the Kjeldahl method according to ISO 8968-1 IDF 20-1
Lactose	results of all the participating laboratories
Freezing point	results of the laboratories using the cryoscopic method by plateau seeking according to ISO 5764 IDF 108
Non-casein nitrogen	results of the laboratories using the Kjeldahl method according to ISO 17997 IDF 29
Dry matter	results of the laboratories using the oven drying until constant weight according to ISO 6731 IDF 21
Urea	results of the laboratories using a enzymatic method according to ISO 14637 IDF 195 or NF V 04-217
Cellules somatiques	results of the laboratories using the ISO 13366-1 IDF 148-1 method (reference method) or ISO 13366-2 IDF 148-2 method (opto-fluoro-electronic)

PROFICIENCY TESTING ON HOMOGENISED MILK

Criterion	Calculation procedure of the assigned value
Fat	results of the laboratories using the Röse-Gottlieb method according to ISO 1211 IDF 1 or ISO 7208 IDF 12 (skim milk)

PROFICIENCY TESTING ON CREAM

Criteria	Calculation procedure of the assigned value
Fat: acido-butyrometric method	results of the laboratories using the acido-butyrometric method according to NF V 04 263
Fat: Röse-Gottlieb method	results of the laboratories using the Röse-Gottlieb method according to ISO 2450 IDF 16
Dry matter	results of the laboratories using the oven drying until constant weight according to ISO 6731 IDF 21

PROFICIENCY TESTING ON CHEESE

Criteria	Calculation procedure of the assigned value
Fat: acido-butyrometric method	results of the laboratories using the Gerber method according to NF V 04-287
Fat: Röse-Gottlieb method	results of the laboratories using the Röse-Gottlieb method according to ISO 1735 IDF 5 or Ar JORF 15/02/1980
Nitrogen: Kjeldahl method	results of the laboratories using the Kjeldahl method according to ISO 8968-1 IDF 20-1
Dry matter	results of the laboratories using the oven drying until constant weight according to ISO 5534 IDF 4 or Ar JORF 15/02/1980
Chlorides	results of all the participating laboratories
Calcium	results of all the participating laboratories

PROFICIENCY TESTING ON DRIED MILK

Criteria	Calculation procedure of the assigned value
Moisture	results of the participating laboratories
Fat	results of the laboratories using the Röse-Gottlieb method according to ISO 1736 IDF 9
Nitrogen: Kjeldahl method	results of the laboratories using the Kjeldahl method according to ISO 8968-1 IDF 20-1
Lactose	results of the laboratories using the enzymatic method according to ISO 5765 IDF 76 or the HPLC method according to ISO 22662 IDF 198

PROFICIENCY TESTING ON BUTTER

Criteria	Calculation procedure of the assigned value
Moisture	results of the laboratories using the oven drying until constant weight method according to ISO 3727-1 IDF 80-1
Non fat solids	results of the laboratories using the ISO 3727-2 IDF 80-2 method
Fat	results of the laboratories using the ISO 3727-3 IDF 80-3 (calculation) and ISO 17189 IDF 194 (extraction) methods
pH	results of the laboratories using the ISO 7238 IDF 104 method
Fat acidity	results of the laboratories using the ISO 1740 IDF 6 method