

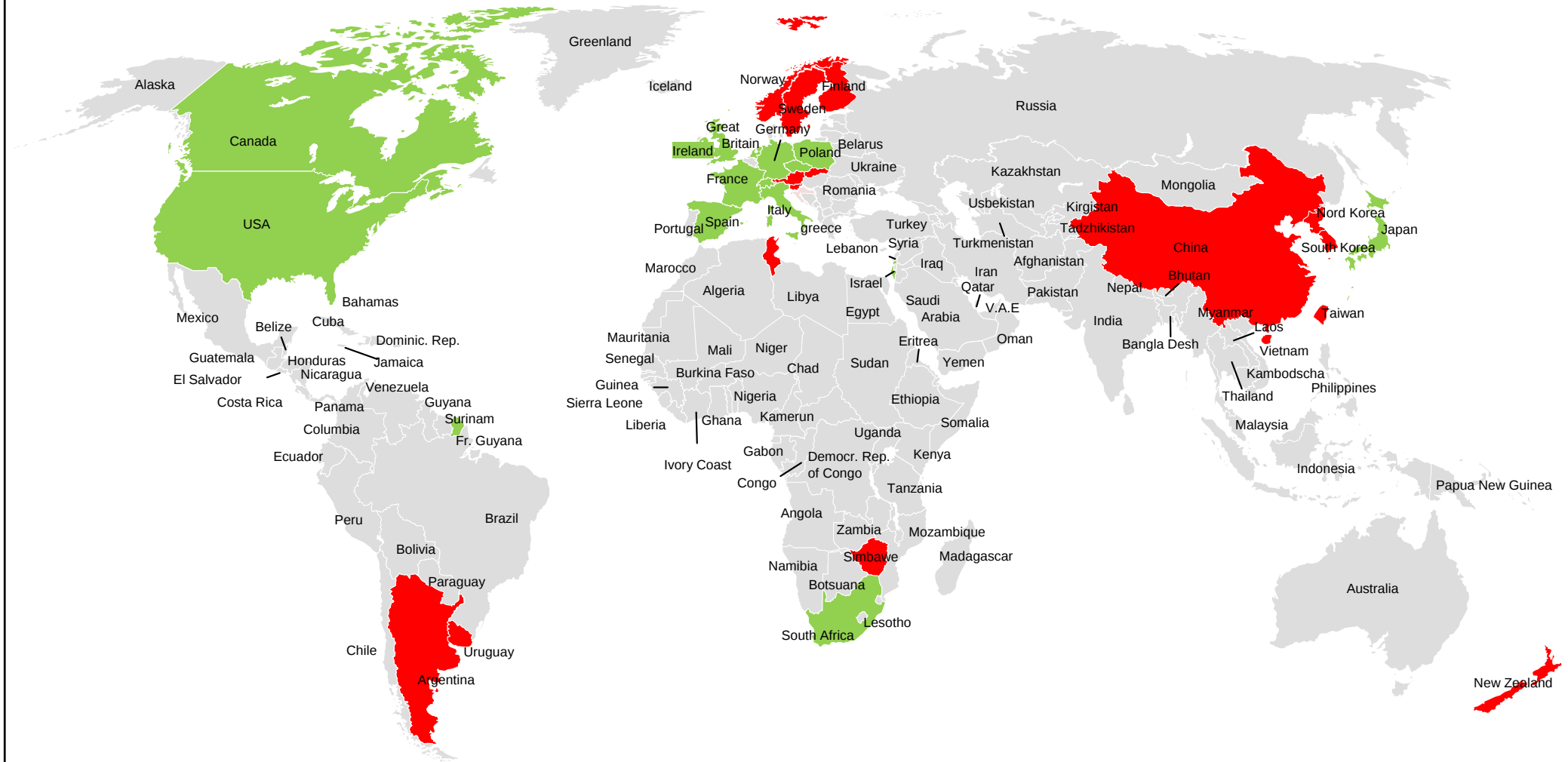


# Towards a global ICAR PT for Milk Analysis

Report prepared by Silvia Orlandini  
ICAR Board Amsterdam 27.05.2016



# Worldmap – ICAR Reference laboratories 2016



**49 ICAR Ref Laboratories**

**36 ICAR Countries**

**44 % countries  
participated in the ICAR  
PT with at least one parameter**



# ICAR PT AIMs

- To promote the ICAR brand and a GLOBAL participation
- To connect the **ICAR milk reference laboratories**
- To create a professional collaboration with the ICAR PT participants
- To calculate the reproducibility among the ICAR laboratories for reference and routine methods
- To highlight the laboratories that participate in the ICAR PT to be consistent with the ICAR certificate of quality
- To evaluate if the ICAR PT reproducibility is fit for the the ICAR purposes and it is lower than reproducibility specified in the ISO standard
- To provide individual performance over the time



# ICAR PT POLICY

ICAR reviewed the contract with the Actalia

## ➤ ICAR

- Coordinate the technical decision taken in the ICAR MA SC and to apply them in the ICAR PT (e.g to extend the participation to the routine methods)
- Announce the ICAR PT
- Collect the participation form
- Receive the ICAR PT results (owner of the data)
- Provide to Actalia the data for the statistical elaboration
- Invoice the ICAR participant
- Maintain direct contact with the ICAR reference laboratories
- To provide a customized individual report with the indication to improve own performance
- To maintain the  $ZS_{PT}$  and  $ZS_{FIX}$  control charts over the time

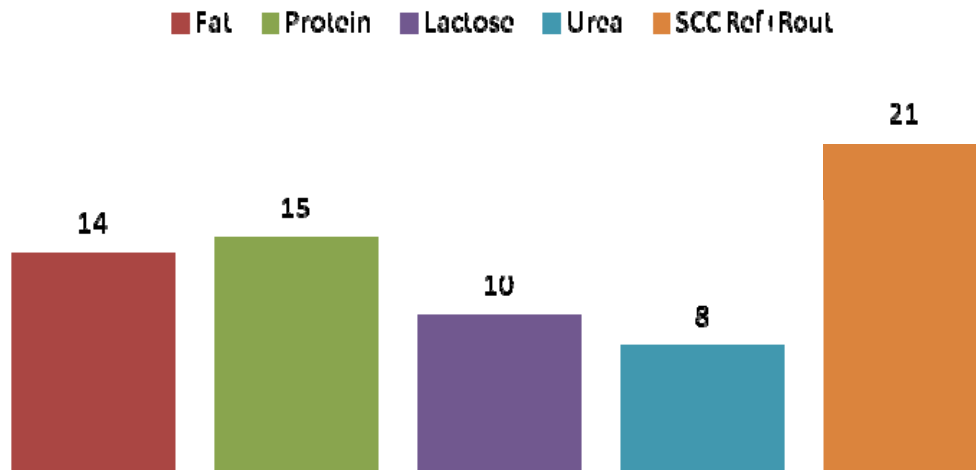
## ➤ **Actalia** NOW is a sub-contractor accredited ISO 17043

- Prepare the samples
- Distribute the samples
- 4 ➤ Provide the statistical elaboration

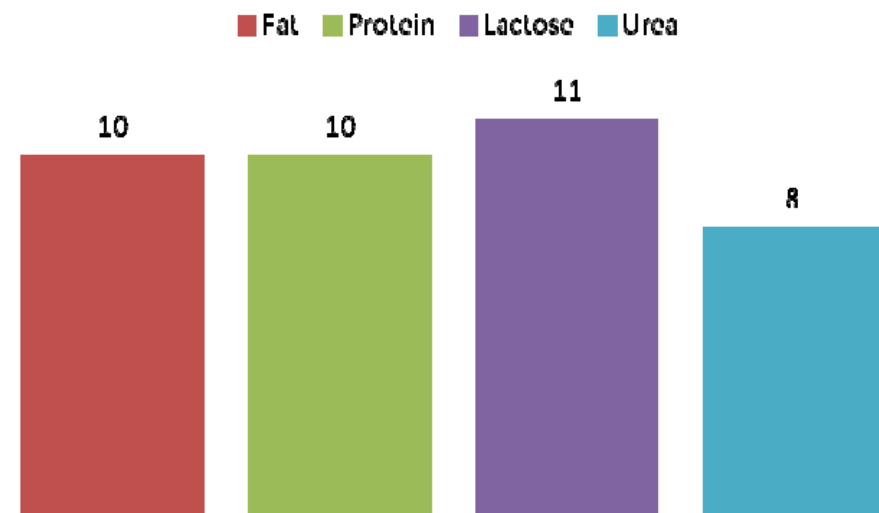


# For a total of 25 subscriptions

## Reference Methods from 13 countries



## Routine Methods from 11 countries





# ICAR PT REPORTS

## (PARTICIPANT VIEW)

Each participant received own report with a summary of own performance and individual control charts



International  
Committee for  
Animal Recording

### ICAR Proficiency Test (PT) Chemical "Reference" methods – March 2016

|                        |  |
|------------------------|--|
| <b>Laboratory Name</b> |  |
|------------------------|--|

| Your participation Codes |                            |                        |                      |                     |                    |     |
|--------------------------|----------------------------|------------------------|----------------------|---------------------|--------------------|-----|
|                          | Fat <sub>ref</sub>         | Protein <sub>ref</sub> | Lactose <sub>r</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> |     |
| A                        | Subscription               | Yes                    | Yes                  | Yes                 | Yes                | Yes |
|                          | Participation Codes        |                        |                      |                     |                    |     |
|                          | Are all the sample results | Yes                    | Yes                  | Yes                 | Yes                | Yes |

| Data received on time |                        |     |    |
|-----------------------|------------------------|-----|----|
| B                     |                        | Yes | No |
|                       | Deadline<br>21.03.2016 |     |    |

| Have you sent the data with the correct units of measurements ? |                    |                        |                        |                     |                    |
|-----------------------------------------------------------------|--------------------|------------------------|------------------------|---------------------|--------------------|
| C                                                               | Fat <sub>ref</sub> | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> |
|                                                                 | g/100g             | nitrogen<br>g/100g     | g/100g                 | mg/dl               | SCC*1000/<br>ml    |
|                                                                 |                    |                        |                        |                     | Yes                |

\*It is requested to report the value in total nitrogen



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| D | Outliers           |                        |                        |                     |                    |
|---|--------------------|------------------------|------------------------|---------------------|--------------------|
|   | Fat <sub>ref</sub> | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> |
|   | g/100g             | g/100g                 | g/100g                 | mg/dl               | SCC*1000/ml        |
|   | sample             | sample                 | sample                 | sample              | sample             |

| E | Repeatability        |                        |                        |                     |                    |                    |                        |                        |                     |                       |
|---|----------------------|------------------------|------------------------|---------------------|--------------------|--------------------|------------------------|------------------------|---------------------|-----------------------|
|   | Your "r" performance |                        |                        |                     |                    | Limits             |                        |                        |                     |                       |
|   | Fat <sub>ref</sub>   | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> | Fat <sub>ref</sub> | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub>    |
|   | g/100g               | g/100g                 | g/100g                 | mg/dl               | SCC*1000/ml        | g/100g             | g/100g                 | g/100g                 | mg/dl               | SCC*1000/ml           |
|   |                      |                        |                        |                     |                    | ISO 4244 IDP 10    | ISO 8358 / IDP 20      | ISO 22662 IDP 100      | ISO IDP 105         | ISO 19366-2 IDP 140-2 |
|   |                      |                        |                        |                     |                    | 8,843 g/100g       | 8,858 g/100g           | 8,85 g/100g            | 1,52 mg/dl          | Level                 |
|   |                      |                        |                        |                     |                    |                    |                        |                        |                     | 25                    |
|   |                      |                        |                        |                     |                    |                    |                        |                        |                     | 42                    |
|   |                      |                        |                        |                     |                    |                    |                        |                        |                     | 54                    |
|   |                      |                        |                        |                     |                    |                    |                        |                        |                     | 64                    |
|   |                      |                        |                        |                     |                    |                    |                        |                        |                     | 126                   |

If the repeatability is smaller than the limit the cell is in green if there is a sample with a "r" bigger than the limit the cell is in red. Please check Table II in surroundings of the parameter and your lab code.

| F | Z-Score            |                        |                        |                     |                    | Interpretation Z-Score |              |            |            |      |
|---|--------------------|------------------------|------------------------|---------------------|--------------------|------------------------|--------------|------------|------------|------|
|   | Your Z-Score PT    |                        |                        |                     |                    | Interpretation Z-Score |              |            |            |      |
|   | Fat <sub>ref</sub> | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> | -2sZ-Score-2           | -1sZ-Score-1 | 1sZ-Score1 | 2sZ-Score2 | 3    |
|   |                    |                        |                        |                     |                    | Good                   | Moderate     | Moderate   | Poor       | Poor |
|   | Your FIX Z-Score   |                        |                        |                     |                    |                        |              |            |            |      |
|   | Fat <sub>ref</sub> | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> |                        |              |            |            |      |

If there is a sample with a "fix-score" in the yellow or red area please check Table VI and VII in surroundings of your lab code.

| G | Ranking of your lab                                  |                        |                        |                     |                    |                                             |                        |                        |                     |                       |
|---|------------------------------------------------------|------------------------|------------------------|---------------------|--------------------|---------------------------------------------|------------------------|------------------------|---------------------|-----------------------|
|   | Mean difference and standard deviation of difference |                        |                        |                     |                    | Indicative Limits defined in the ICAR MA SC |                        |                        |                     |                       |
|   | Fat <sub>ref</sub>                                   | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub> | Fat <sub>ref</sub>                          | Protein <sub>ref</sub> | Lactose <sub>ref</sub> | Urea <sub>ref</sub> | SCC <sub>alt</sub>    |
|   | g/100g                                               | g/100g                 | g/100g                 | mg/dl               | SCC*1000/ml        | g/100g                                      | g/100g                 | g/100g                 | mg/dl               | SCC*1000/ml           |
|   |                                                      |                        |                        |                     |                    | ISO 4244 IDP 10                             | ISO 8358 / IDP 20      | ISO 22662 IDP 100      | ISO IDP 105         | ISO 19366-2 IDP 140-2 |
|   |                                                      |                        |                        |                     |                    | 4-1,02                                      | 4-1,025                | 4-1,10                 | 4-2,5               | 4-35                  |

If 4 and rd are in the limit (see Table 1 and Figure 1) the cell are in green

Note: Limits are only indicative and are for do not multiply standard values then indicate what is normally practicable to take for the purpose of the evaluation of the lab.

Legenda:



green: better performance for all the sample  
yellow: some sample showed a performance out of range or there are missing data  
red: The parameter was not analyzed



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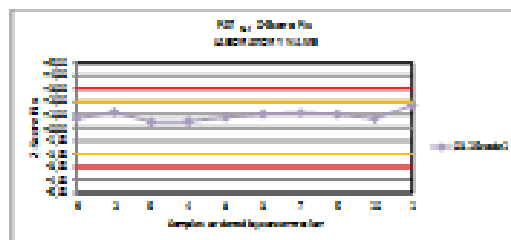
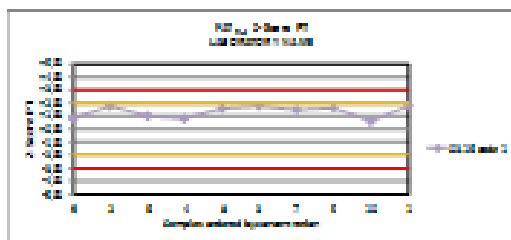


### ICAR Proficiency Test (PT) Chemical "Reference" methods – March 2016

H

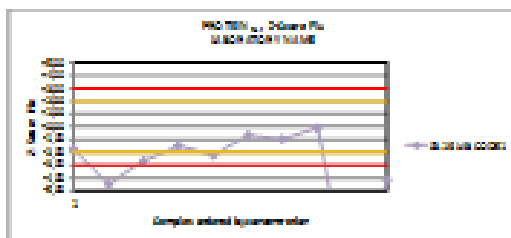
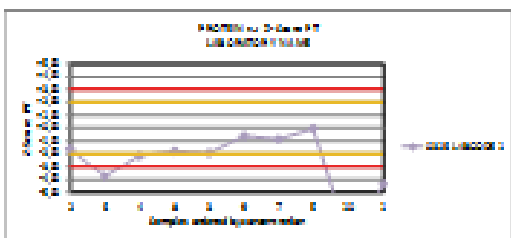
#### Control Charts

##### Control Charts Fat



4.11  
3.91

##### Control Charts Protein



- <http://www.icar.org/index.php/certifications/milk-laboratories-proficiency-test-2016>



# ICAR PT REPORTS

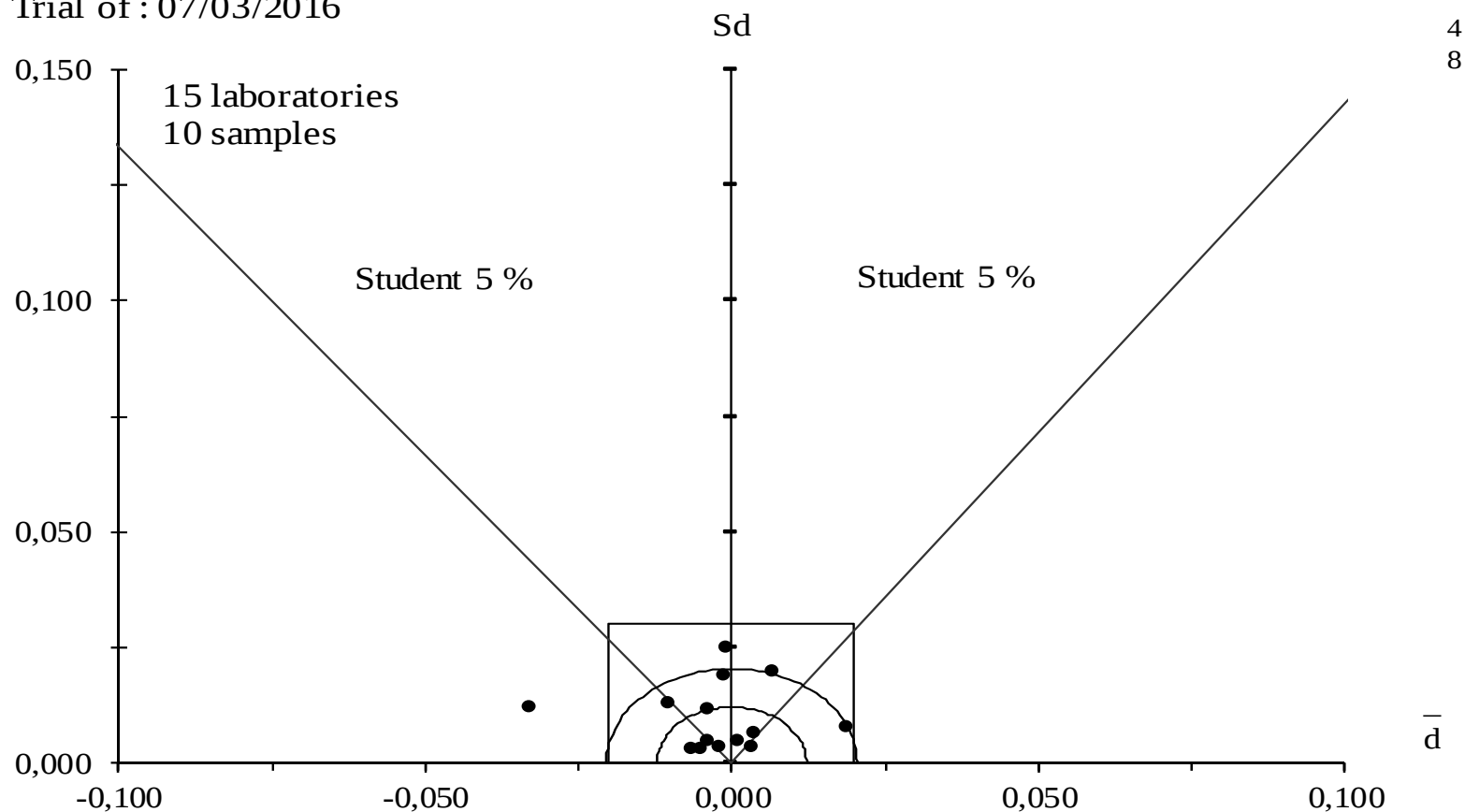
(ICAR VIEW)

## FAT (REFERENCE METHOD)

ICAR Interlaboratory Proficiency Study - March 2016

2 Labs OUT OF THE TARGET ( 13 % )

Trial of : 07/03/2016





# ICAR PT REPORTS

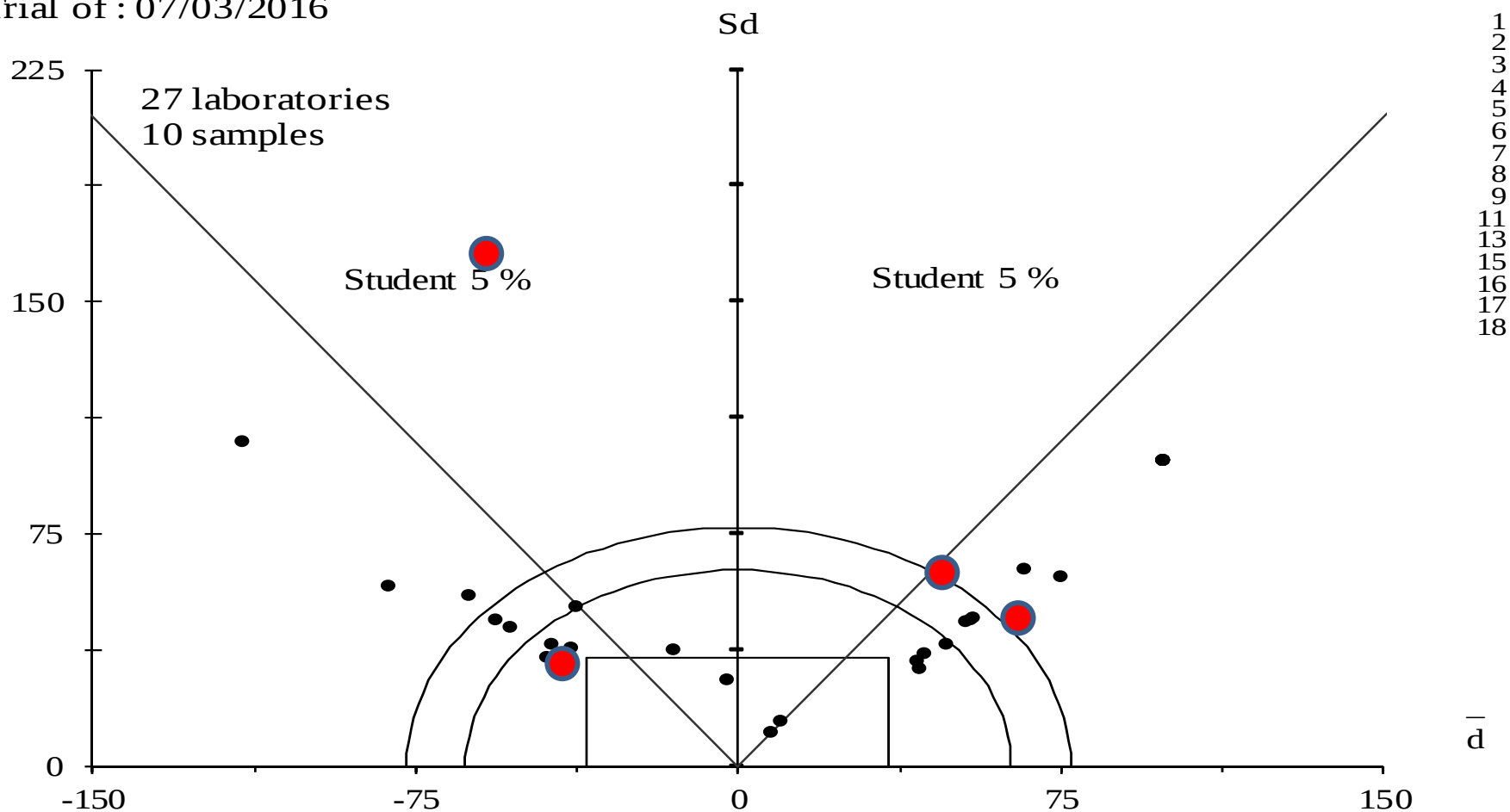
(ICAR VIEW)

## SCC (REFERENCE & ROUTINE METHOD)

ICAR Interlaboratory Proficiency Study - March 2016

Trial of : 07/03/2016

89 % out of the target





# **Reference System for Somatic Cell Counting (RSSCC)**

**IDF/ICAR Project Group**

**4 Continents**

**17 Countries**

**27 Members**



# CONCLUSIONS

To re-call the attention of the non participant laboratories for the next PT round September 2016

To improve the communication with the sub-contractor

To report the results in the MA SC and to evaluate possible statistical technical implementations

To evaluate to consider the participation of non-ICAR members  
(dairy industry-university centres, other)