

### SCANSTATION IN COSMETIC TESTING

*Study carried out at Cosmepar (Carquefou, France)*

#### Goal

The objective of this study is to evaluate the ScanStation® 100's performances vs. manual method for the analysis of any matrices in beauty care from pure strains.

For an optimal interpretation, the graph, contained in this file, is realized from 109 samples, the average of every duplicate.

The maximum difference chosen in absolute value is 0.3 log.

#### Protocol and tested bacteria

- The inoculation was made in pour- and spread-plates on TSA agar.
- The results are based on the average. Every sample was made in duplicate.

#### Bacterias

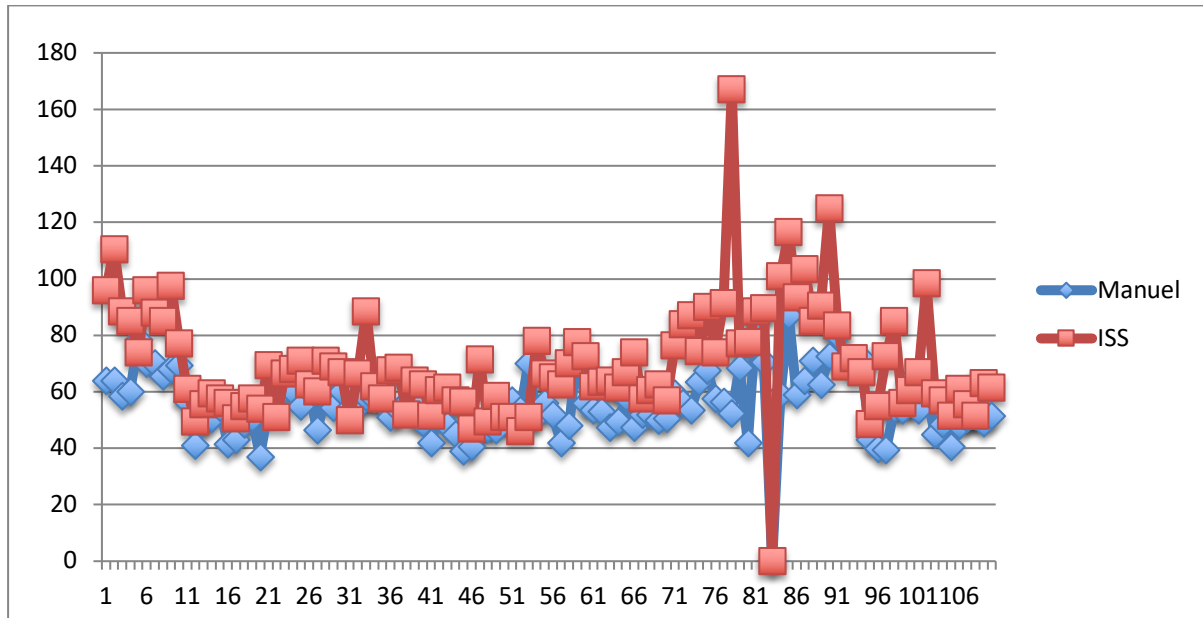
- *Escherichia coli*
- *Pseudomonas aeruginosa*
- *Staphylococcus aureus*
- *Candida albicans*
- *Aspergillus brasiliensis*

#### Cosmetic samples

- Foundation cream
- Mascara
- Cream
- Mask
- Liquid solutions
- Scrub gel
- Make up
- Sun cream...

## Results

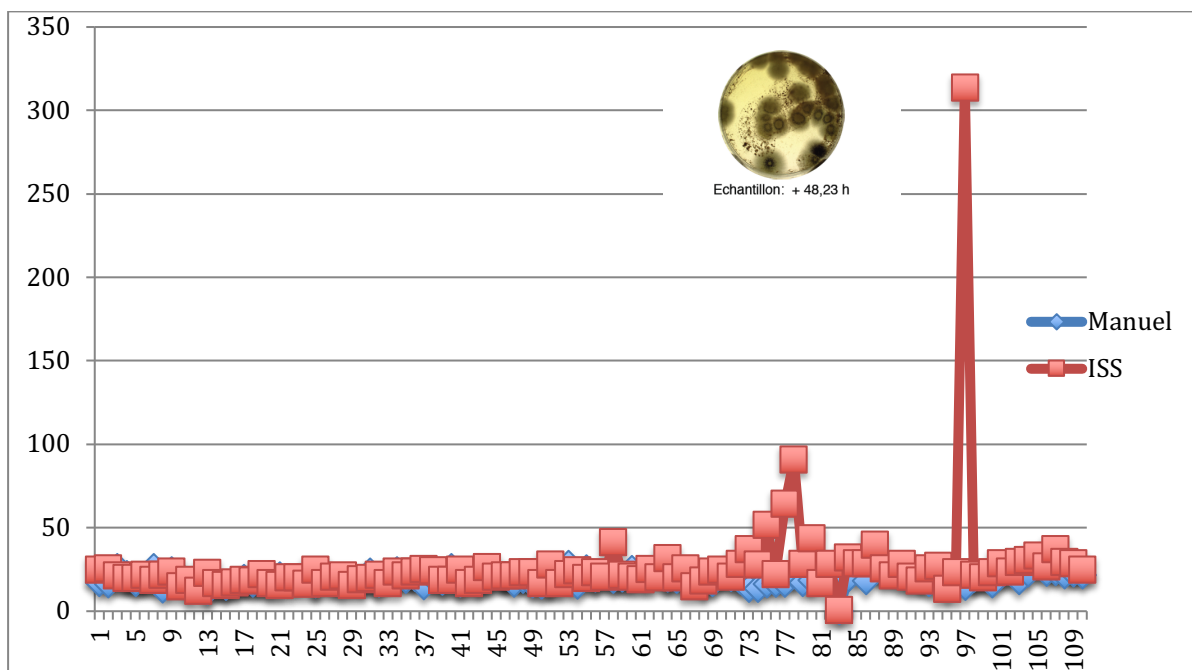
### 1. Staphylococcus aureus



Graph 1: comparison of counting of *S.aureus* manual VS ISS

The interpretation of the counting of *S.aureus* shows that 99.1 % of the results are  $<0,3$  log.

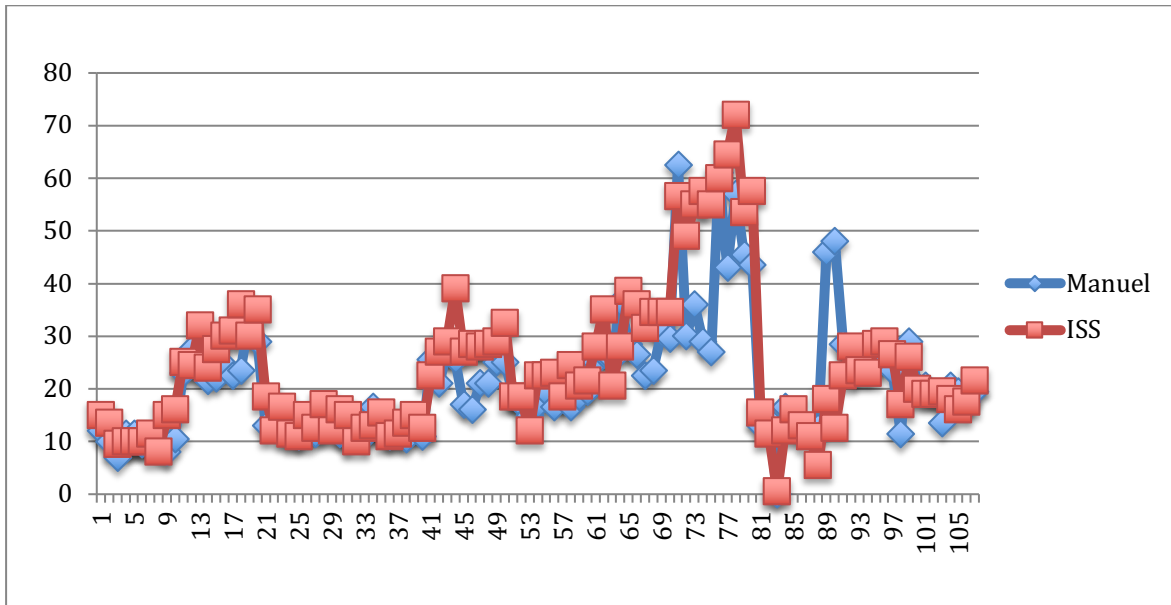
### 2. Candida albicans



Graph 2: comparison of counting of *Candida albicans* manual VS ISS

The interpretation of the counting of *Candida albicans* shows that 93.6 % of the results are  $<0.3$  log. Indeed, the sample n° 97 is represented by a false value. The sample contained a strong concentration of foundation cream, which got the upper hand over the bacterial growth.

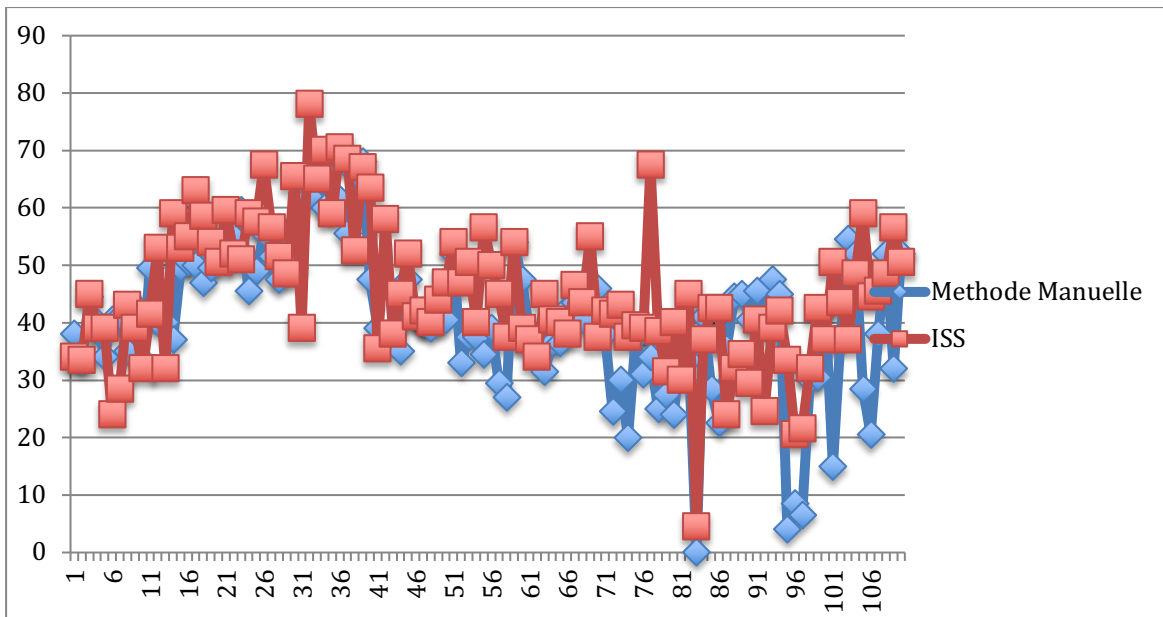
3. *Aspergillus brasiliensis*



Graph 3: comparison of counting of *Aspergillus brasiliensis* manual VS ISS

The interpretation of the counting of *Aspergillus brasiliensis* shows that 94.5 % of the results are <0,3 log.

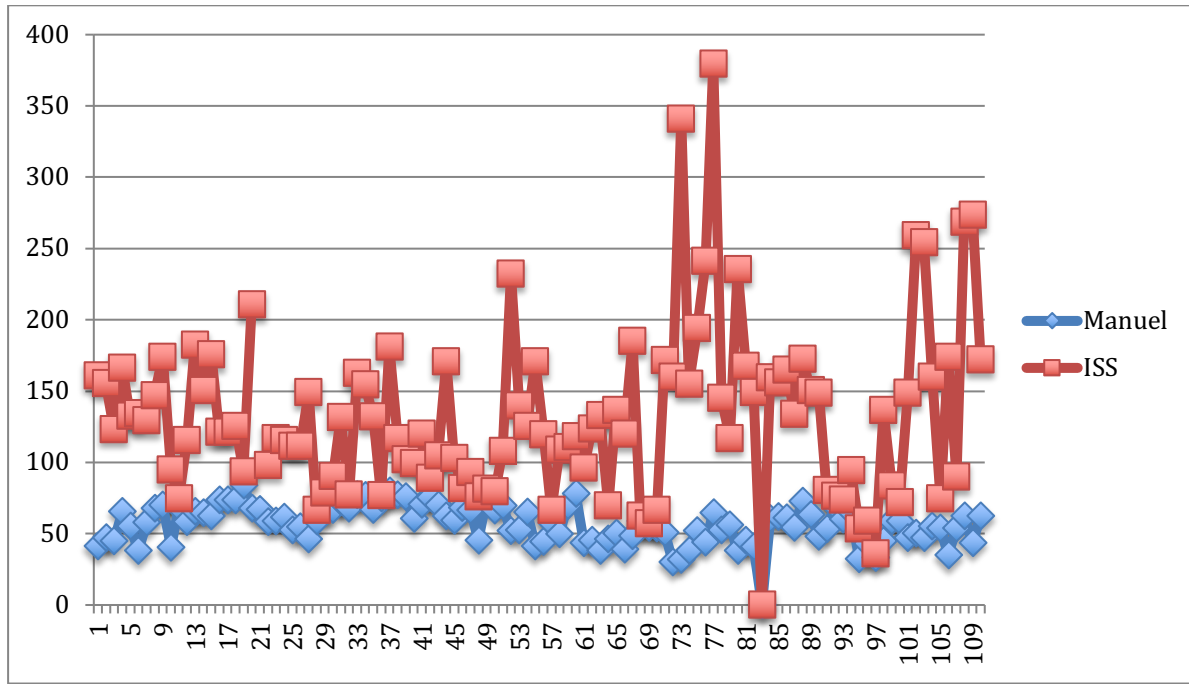
4. *Pseudomonas aeruginosa*



Graph 3: comparison of counting *Pseudomonas aeruginosa* manual VS ISS

The interpretation of the counting of *Pseudomonas aeruginosa* shows that 93.7 % of the results are <0.3 log.

5. *Escherichia coli*



Graph 5: comparison of counting *Escherichia coli* manual VS ISS

The interpretation on the counting of *Escherichia coli* shows that 46.8 % of the results are <0.3 log. Indeed, the bacterial growth of *Escherichia coli* undergoes an "explosion" creating a heap of colonies difficult to differentiate. This heap forms in a short time, which does not allow the ISS to see the appearance of every colony present in the heap. The new update of the software will allow us to develop this graph for better results.

Results interpretation

The tests show that the use of ScanStation® 100:

- Allows to count colonies during incubation
- Allows the analysis of any cosmetic matrices
- Allows the realization of Challenge tests

The different graphs show that manual counting and counting with the ScanStation® do not present significant differences except where explicable. We see that the ISS tends to overestimate the counting compared to manual counting; the cosmetic matrices present many colony-resembling particles, which the ISS differentiates better than the human eye.