Update on the STEC Network preparedness for molecular typing data collection
(PT-PFGE5)

Antonella Maugliani

EU Reference Laboratory for Escherichia coli including VTEC

Dept. of Food Safety, Nutrition and Veterinary Public Health

Istituto Superiore di Sanità, Rome, Italy

www.iss.it/vtec

2012

Vision paper on the development of data bases for molecular testing of foodborne pathogens in view of outbreak preparedness.

2013…
SETTING-UP

- **PFGE SOPs produced by EURLs for STEC, *Listeria monocytogenes* and Salmonella describes all the details for the production, interpretation and curation of the PFGE profiles**
  http://www.efsa.europa.eu/sites/default/files/scientific_output/files/main_documents/704e.pdf ; /702e.pdf ; / 703e.pdf
- **Technical Specification on molecular typing data collection, on metadata and on the ownership of the data**

PRESENT

- ✓ **EFSA DATA-BASE is a reality**
- ✓ **Several MS nominated their rapresentative for submitting molecular typing data (11MS for 2016)**
- ✓ **The curators are ready too**

The EURL-VTEC activities for the preparedness on molecular typing

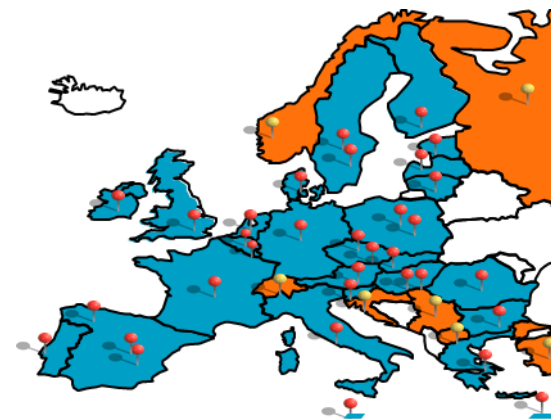✓ **Proficiency tests (EQA) on PFGE (5 rounds in 2012-2016)**

THE PT-PFGE6 STRAINS WILL BE SENT NEXT MONTH 😉

✓ **Training sessions on PFGE (2012-2017)**

       20 NRLs TRAINED

✓ **Basic courses on BioNumerics software**
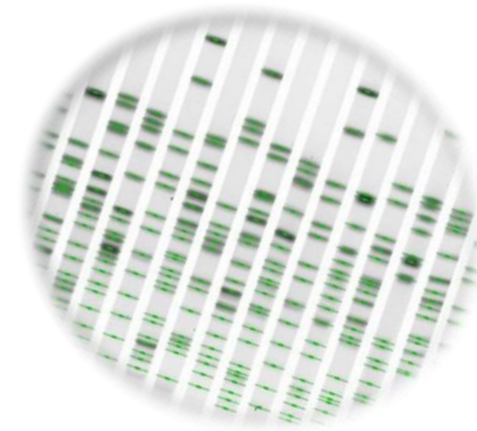
       (2014-2017)

THE AIMS

EQA ON PFGE: useful tool to asses the capability to produce the good quality profiles

The database for non human PFGE profiles should contain high quality profiles

The EURL-VTEC Proficiency testing activity on PFGE

1. **PT-PFGE1 (with PT10, January-March 2013)**
   - ➢ 16 EU NRLs + Norway, Switzerland and Egypt
   - ➢ 11 *E.coli* strains
   - ➢ Conducted jointly with the ECDC-FWD network

2. **PT-PFGE2 (with PT11, June-September 2013)**
   - ➢ 23 EU NRLs + Norway and Switzerland
   - ➢ 6 *E.coli* strains

3. **PT-PFGE3 (with PT13, April-June 2014)**
   - ➢ 25 EU NRLs + Norway and Switzerland
   - ➢ 7 *E.coli* strains

4. **PT-PFGE4 (April-June 2015)**
   - ➢ 24 EU NRLs + Norway, Switzerland, Macedonia and Russia
   - ➢ 10 *E. coli* strains
   - ➢ Conducted jointly with the ECDC-FWD network
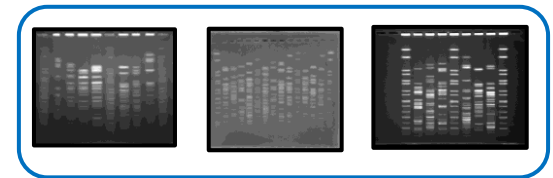
5. **PT-PFGE5 (November-December 2016)**
   - ➢ 17 EU NRLs + Norway and Turkey
   - ➢ 10 *E. coli* strains, in the framework of the PT18

6. **PT-PFGE6 (with PT20 COMING SOON)**
   - ➢ 21 EU NRLs + Norway and Turkey
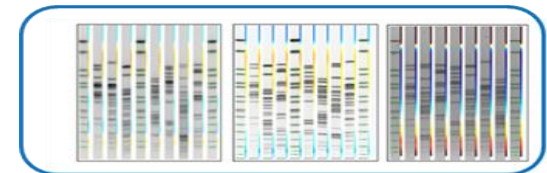   - ➢ 6 E. coli strains, together with the PT-WGS1

EQA on molecular typing: evaluation NRL's Proficiency

➢ **PT-PFGE1 and PT-PFGE2:** PulseNet Procedure PNQ01(visual assessment)

➢ **PT-PFGE3 , PT-PFGE4 AND PT-PFGE5 :** EFSA SOP for PFGE profile interpretation (BioNumerics assisted)
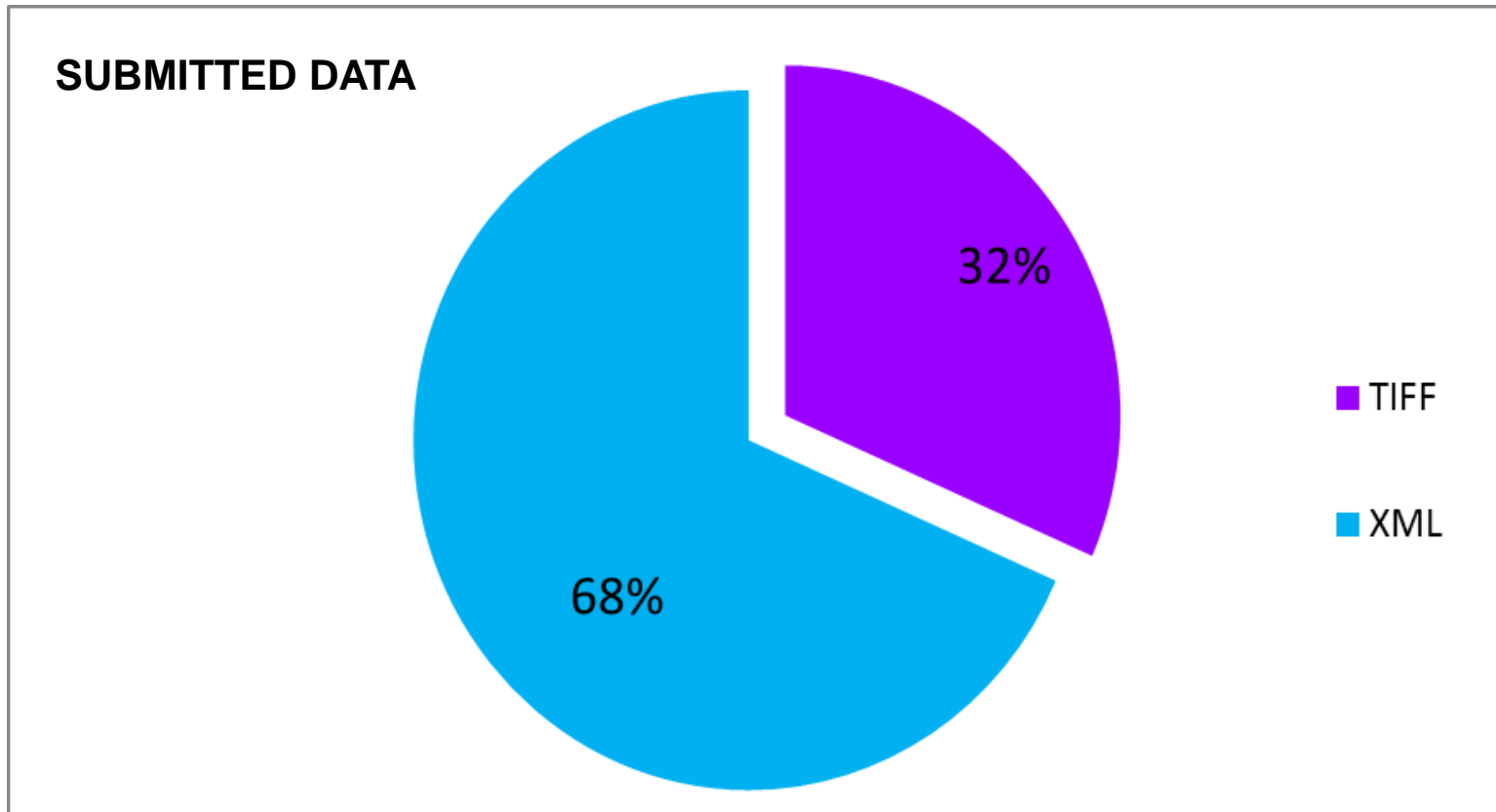
➢ **PT-PFGE6:** EFSA SOP

http://www.efsa.europa.eu/en/supporting/doc/704e.pdf

Rating:

P	F	G	E
o	a	o	x
o	i	o	c
r	r	d	e
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APPROVED QUALITY CONTROL
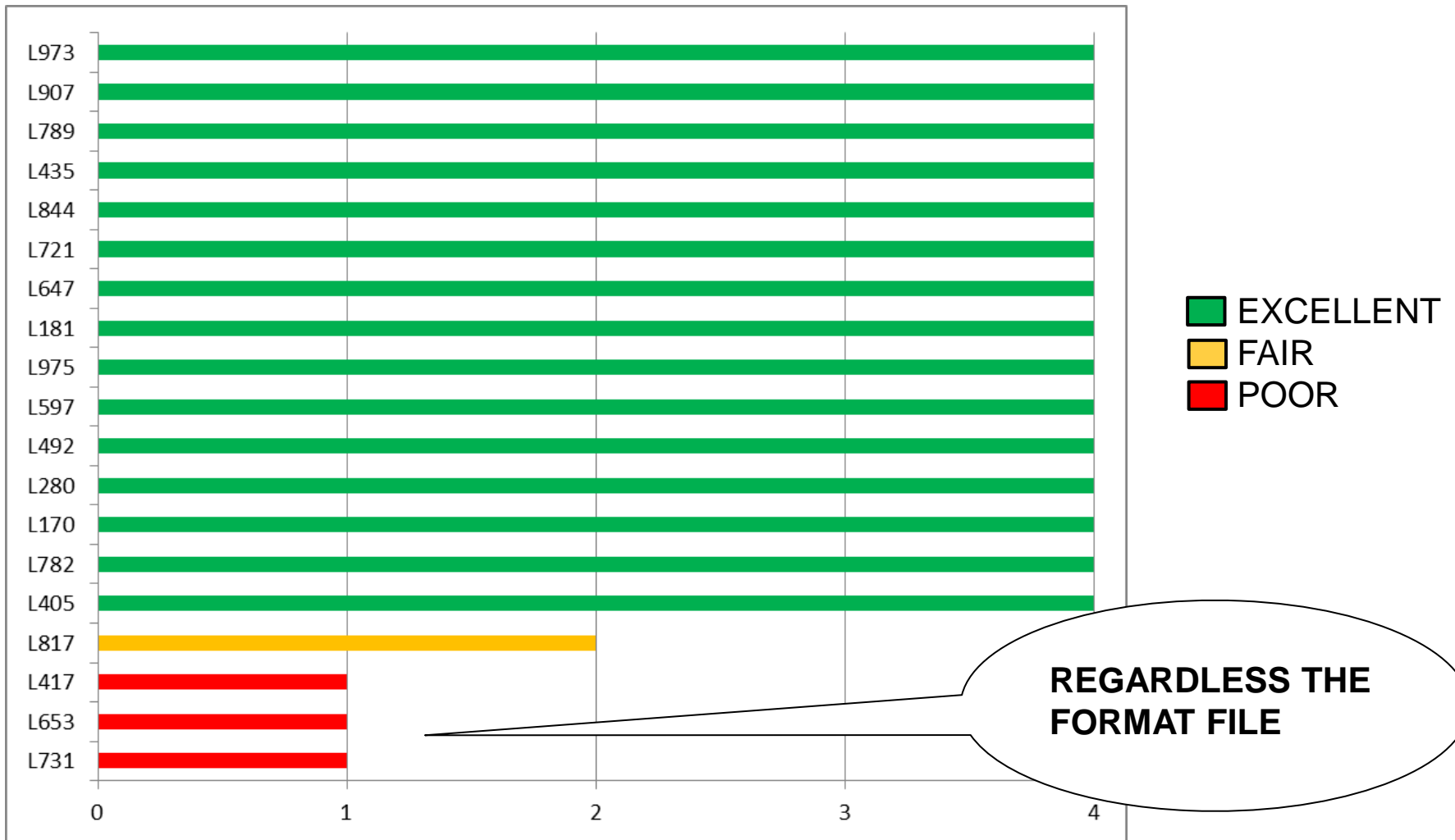
PT-PFGE5 RESULTS - 1
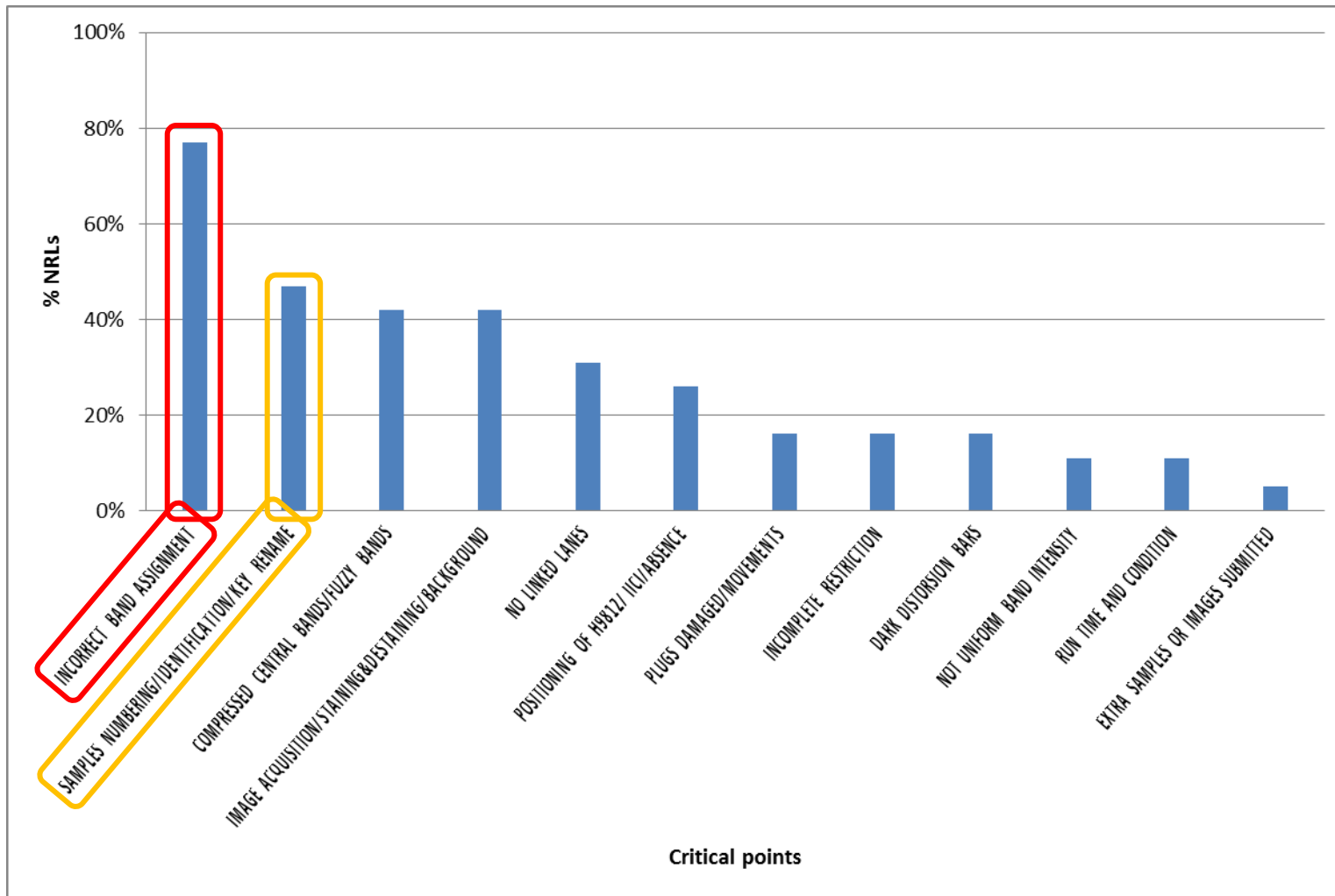
SUBMITTED DATA

- 32% TIFF
- 68% XML

- **TIFF: GEL IMAGE FILE + EXCEL FILE**

- **XML: FILE GENERATED BY THE SOFTWARE BIONUMERICS AFTER THE ANALISYS PERFORMED BY THE NRL**

PT-PFGE5 RESULTS - 2
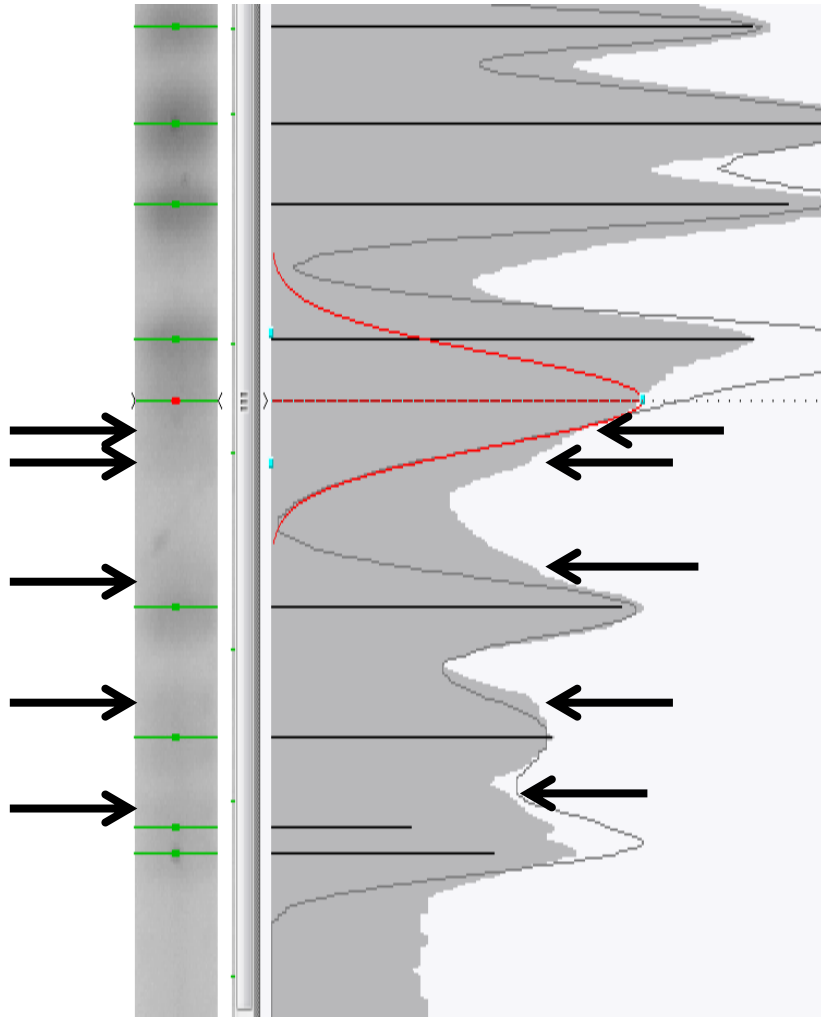

Legend: EXCELLENT (green), FAIR (yellow), POOR (red)

REGARDLESS THE FORMAT FILE

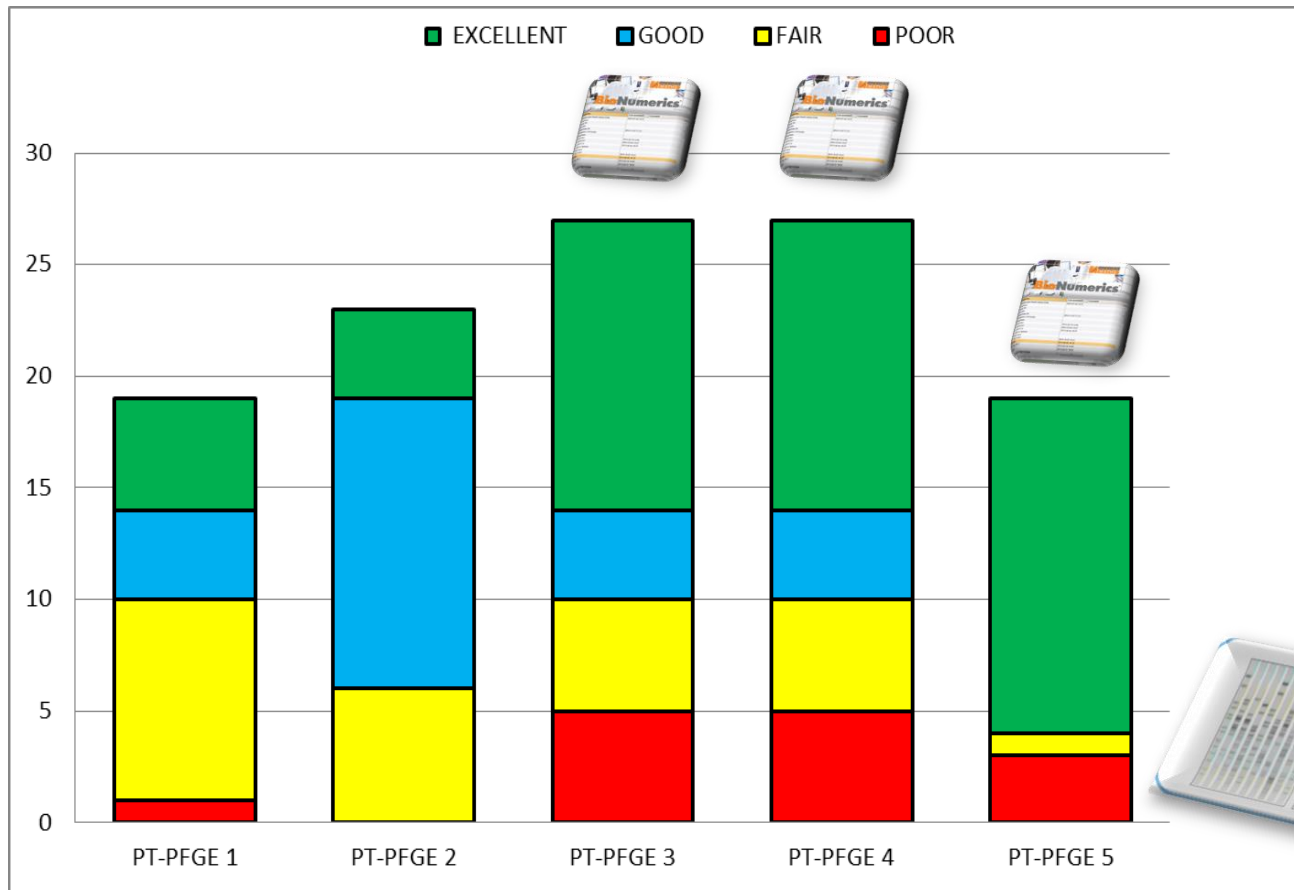# CRITICAL POINTS PT-PFGE5

BAND ASSIGNMENT

SAMPLE IDENTIFICATION

➢ **ALWAYS CHECK THE POSITION OF THE STRAINS WITHIN THE LANES** ✓

➢ **ALWAYS VERIFY THE CORRECT IDENTIFICATION OF THE STRAIN WITHIN EACH LANE** ✓

➢ **IT'S CRUCIAL FOR THE IDENTIFICATION OF THE STRAIN PROFILE** ✓

PFGE Proficiency testing (EQA): Trend from 2012…

NRLs performance in producing PFGE profiles

The EURL-VTEC training activities for molecular typing

✓ **10 Training sessions on PFGE (2012-2017)**

(in total 24 colleagues: 20 NRLs + Norway + Algeria + 2 non NRLs)

✓ **3 Courses on BioNumerics software use**

     - 2014 edition @EURL-VTEC

     10 participants + 2 observers from Nigeria and USA

     - 2016 edition @EURL-LM-ANSES- joint with the three EURLs (E. coli-Salmonella Listeria)

     12 participants from the three pathogens vet-networks

     - 2017 edition @EURL-VTEC- joint with the three EURLs

     12 participants from the three pathogens vet-networks

… the fourth edition will be organized by EURL-Salmonella joint with all the three EURLs in the Summer 2018

Collaboration between the three EURLs (STEC, *Listeria monocytogenes* and *Salmonella*) has been established

The main objective is the **HARMONIZATION**

COMMON BN COURSE (2016- 2017- 2018)

Conclusions

- ✓ **Many labs continue to apply for the training on PFGE - Importance of the participation in the PT after the training session (55% of the participating labs improved their performance)**

- ✓ **Proficiency test activity is a very useful instrument either for the design of the SOPs used for the evaluation either for the assessment of the preparedness of the network for the EFSA-DB**

- ✓ **79% of the participants in the PT-PFGE5 accomplishing an excellent result**

- ✓ **Collaboration between vet-EURLS has been established to consolidate the network on BN analysis (two JOINT- BN courses have performed and one more is planned)**

- ✓ **The identification of the critical points will be used by the EURL-VTEC to find the areas needing dedicated training sessions**

THANK YOU…