

Update on the STEC Network preparedness for molecular typing data collection (PT-PFGE6)

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

The EURL-VTEC activities for the preparedness on molecular typing

- ✓ Proficiency tests (EQA) on PFGE (6 rounds in 2012-2018)

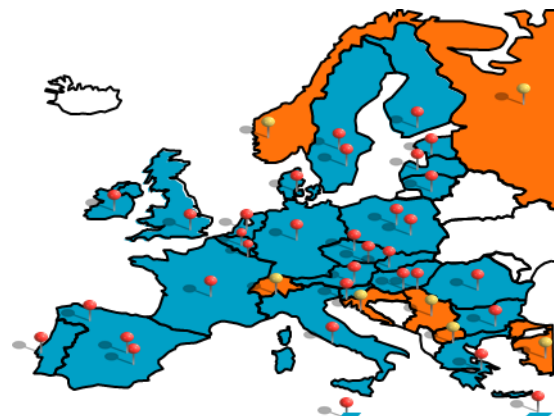
THE PT-PFGE7 STRAINS WILL BE SENT NEXT MONTH



- ✓ Training sessions on PFGE (2012-2018)

11 sessions

27 TRAINEES



- ✓ Basic courses on BioNumerics software (2014-2018)

4 sessions (3 joint with other EURLs)

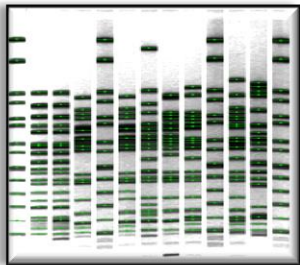
45 TRAINEES

AIMS & OBJECTIVES



EQA ON PFGE: for the assessment of the capability to produce good quality profiles

TRAINING: for the transfer of knowledge on the use of the correct protocols



**To provide high quality PFGE profiles
For the non human database for
molecular typing**

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)

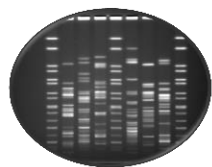
- 17 EU NRLs + Norway and Turkey
- 10 *E. coli* strains, in the framework of the PT18

6. PT-PFGE6 (with PT20 , November 2017-January 2018)

- 19 EU NRLs + Norway
- 6 *E. coli* strains, together with the PT-WGS1

- 7. PT-PFGE7 (with PT23 COMING SOON)**
- 18 EU NRLs + Norway, Turkey and Russia
 - 6 *E. coli* strains

EQA on molecular typing: evaluation NRL's Proficiency



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



✓ **From the PT-PFGE3:** EFSA SOP for PFGE profile interpretation (BioNumerics assisted)

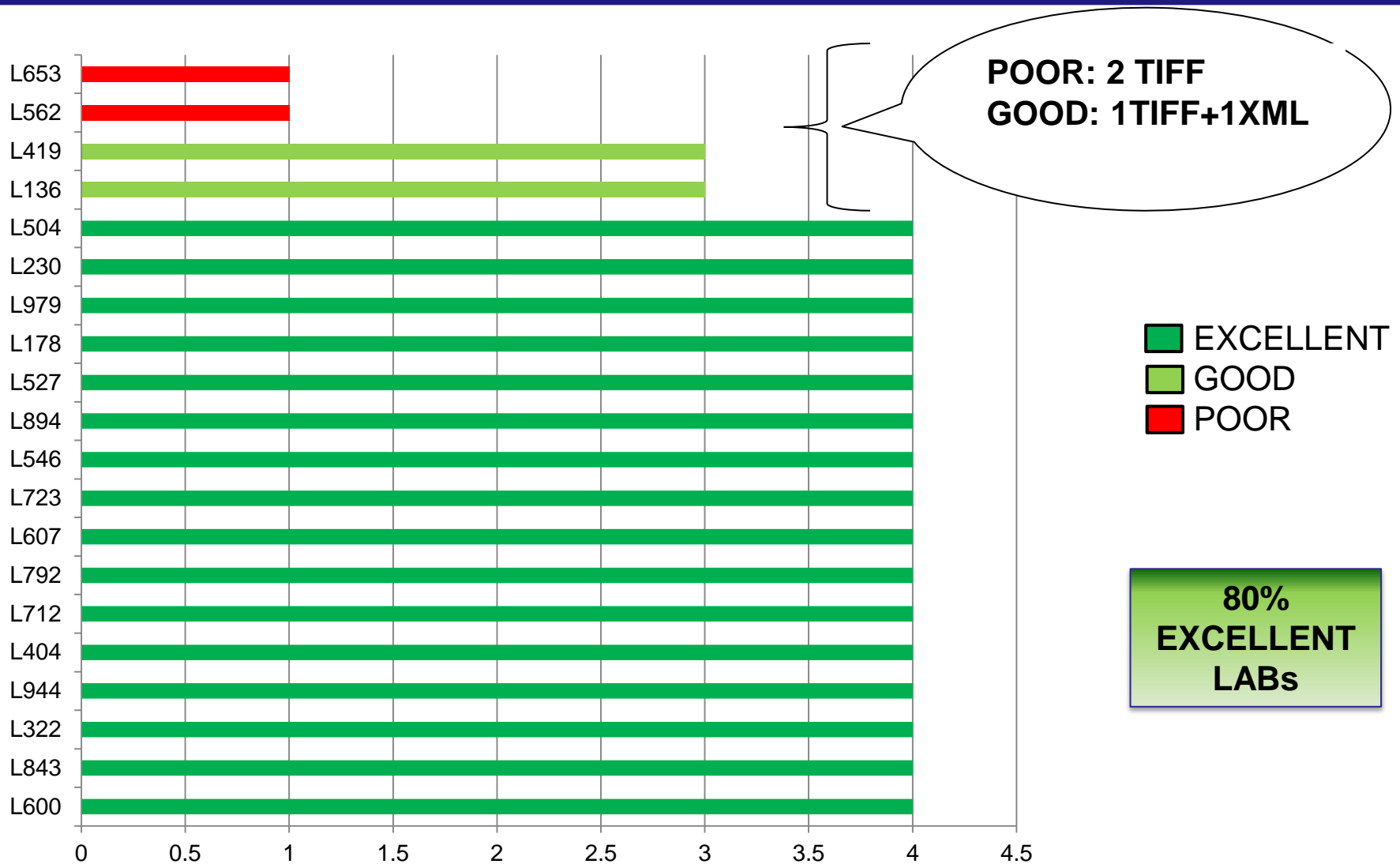


✓ **From the PT-PFGE4:** we have included the possibility to submit the XML files, generated by the BioNumerics software



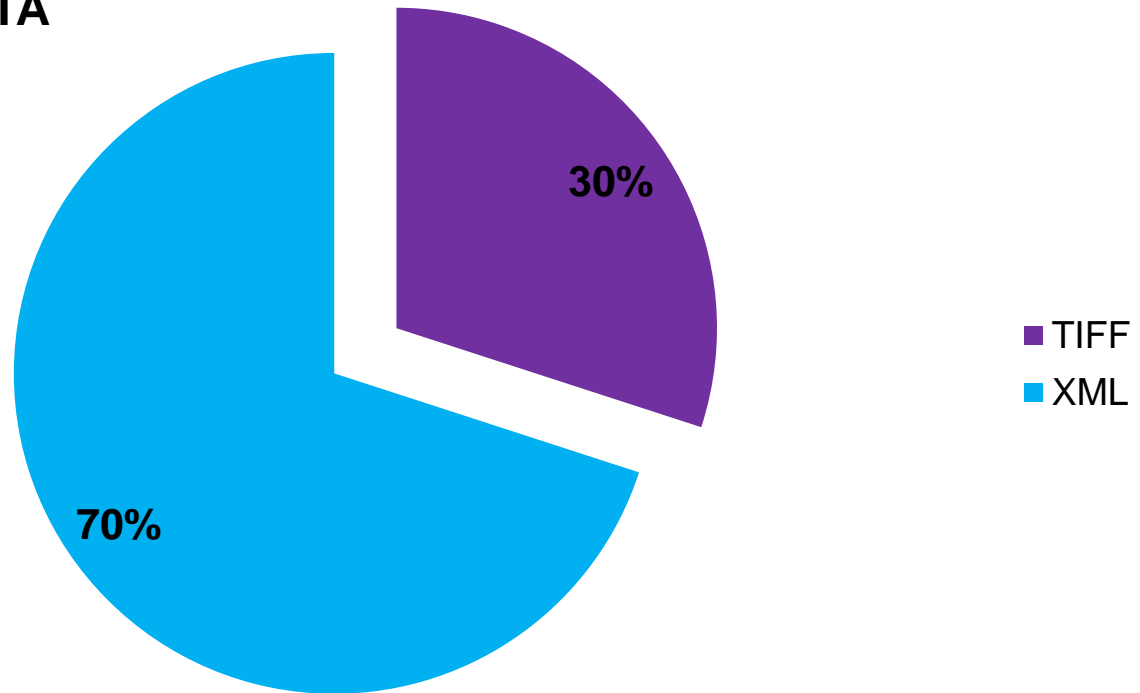
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PT-PFGE6 RESULTS - 1



PT-PFGE6 RESULTS - 2

SUBMITTED DATA



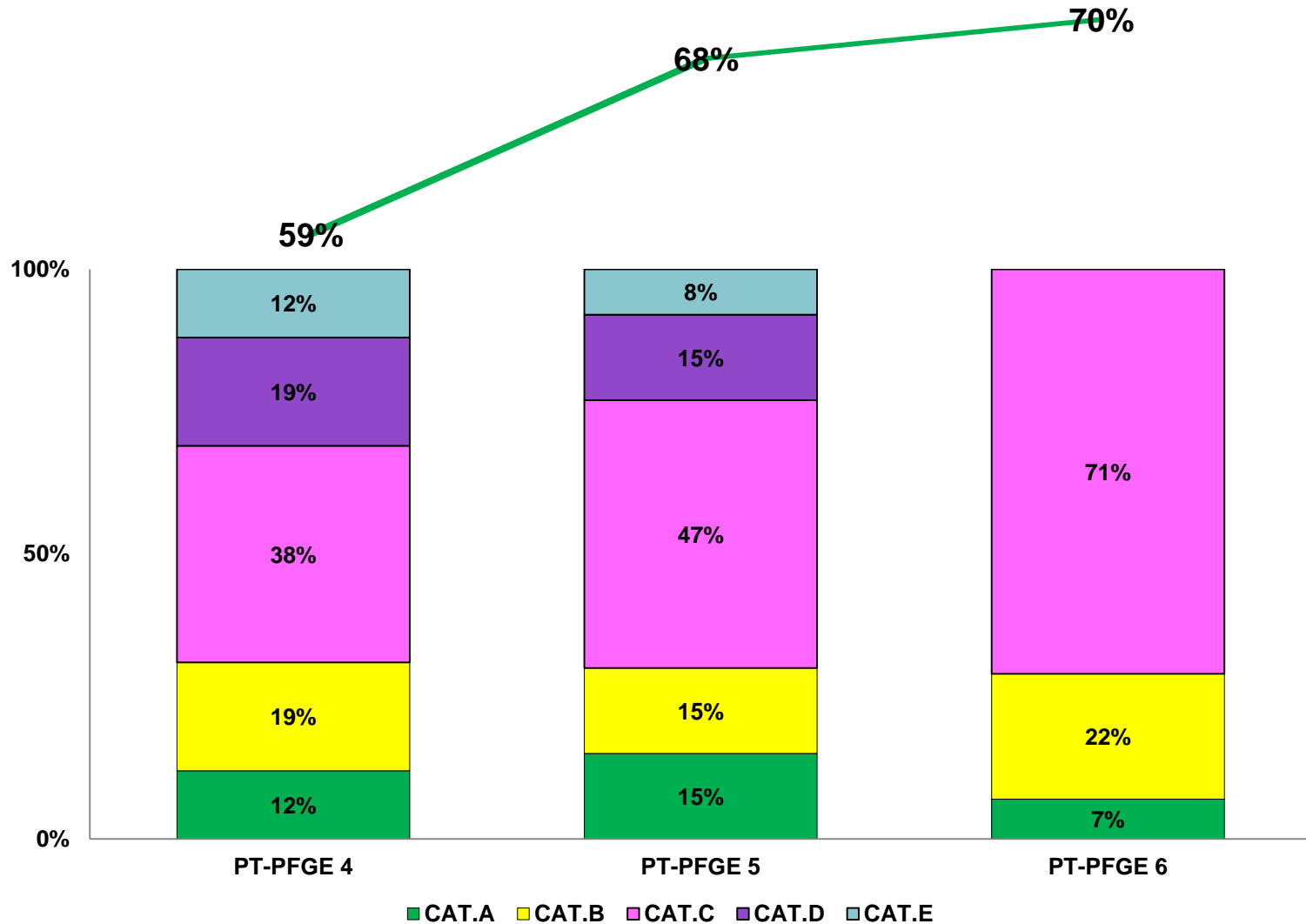
- **TIFF: GEL IMAGE FILE + EXCEL FILE**
- **XML: FILE GENERATED BY THE SOFTWARE BIONUMERICS AFTER THE ANALISYS PERFORMED BY THE NRL**

BAND ASSIGNMENT EVALUATION

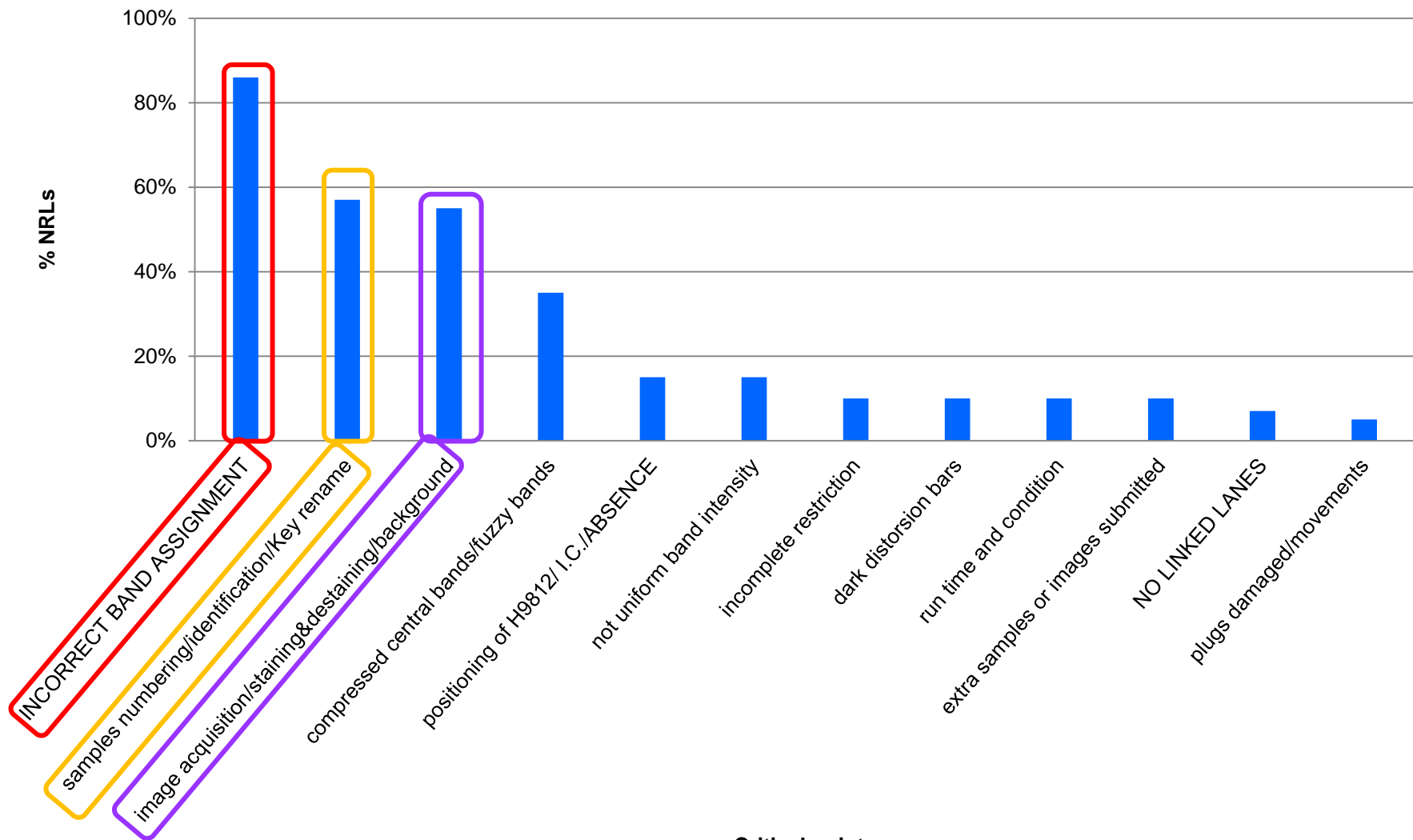
THE LABORATORIES WERE ASSIGNED TO CATEGORIES FROM A TO E, ACCORDING TO THE FOLLOWING CRITERIA:

- **A: NO MODIFICATIONS OF THE BAND ASSIGNMENT IN THE XML FILES WERE NEEDED.**
- **B: ONLY SOME MODIFICATIONS OF THE BAND ASSIGNMENT WERE NEEDED.**
- **C: MAJOR MODIFICATIONS OF THE BAND ASSIGNMENT OR COMPLETE RE-ASSIGNMENT WERE NEEDED.**
- **D: BOTH NORMALIZATION AND BAND ASSIGNMENT HAD TO BE REPEATED.**
- **E: THE XML FILE WAS NOT USABLE FOR THE CLUSTER ANALYSIS.**

TREND FOR THE XML SUBMISSION



CRITICAL POINTS PT-PFGE6



NEW FINDINGS



✓ **RECURRING ERRORS**

50% NRLS (10 PARTICIPANTS) PRESENTED 15 RECURRING ERRORS:

11 - VISUAL ASSESSMENT, RELATED TO GEL QUALITY

4 - IN DEPTH ANALYSIS, LINKED WITH BN (ALWAYS KEY RENAMED)

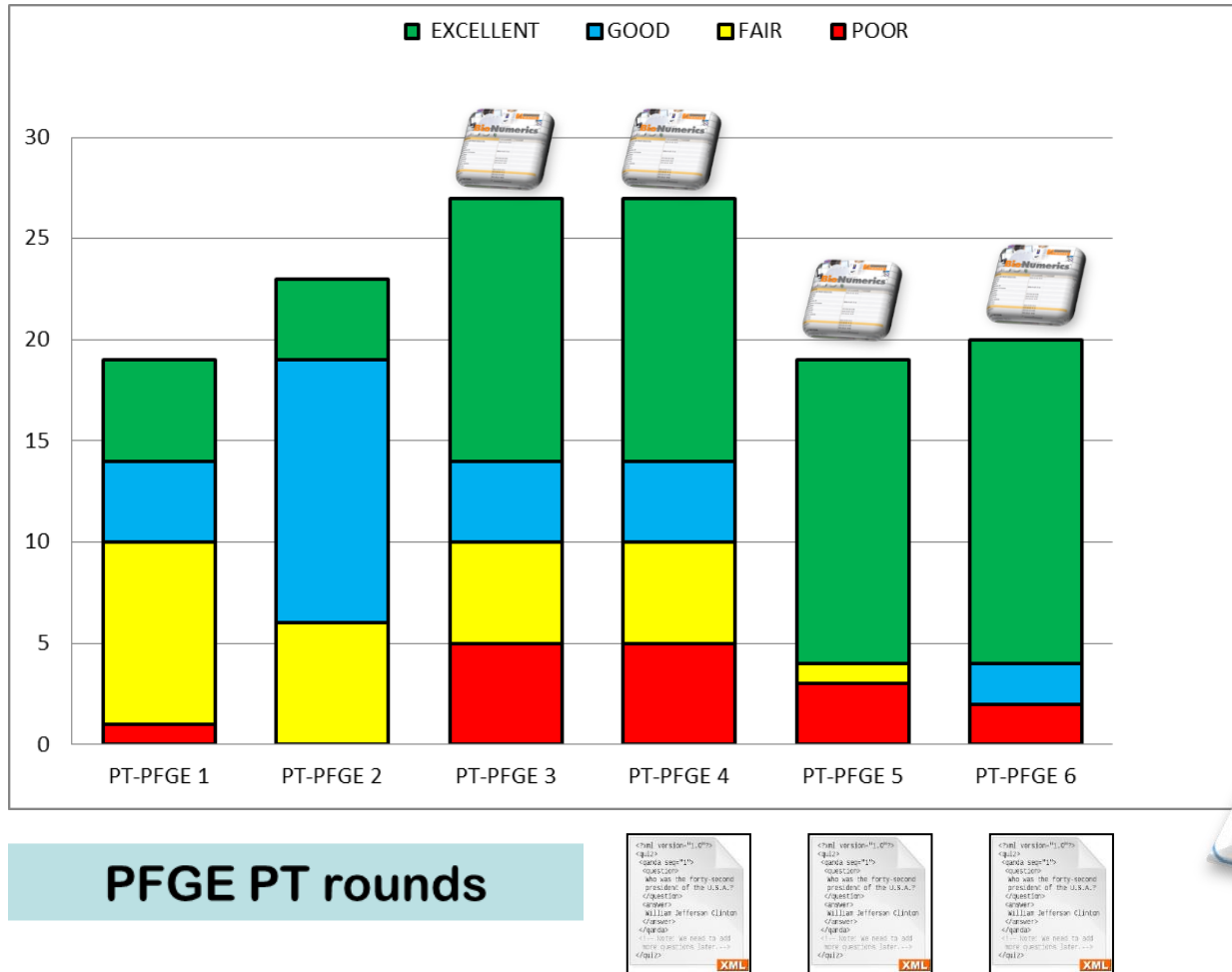
✓ **2 NEW ENTRIES NRLs**

ALREADY TRAINED IN 2017 AND 2018 FOR PFGE AND ONE NRL
TRAINED ALSO FOR BN

BOTH EXCELLENT WITH TIFF AND XML SUBMITTED

PFGE Proficiency testing (EQA): Trend from 2012...

NRLs performance in producing PFGE profiles

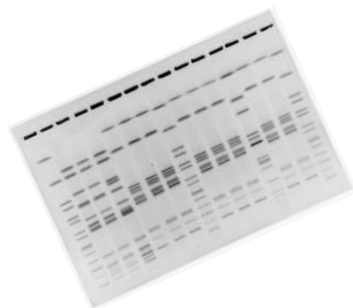


Training Activities for molecular typing

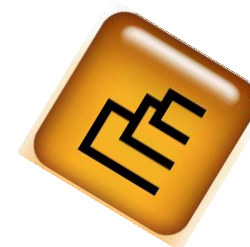
- On molecular typing of VTEC by PFGE @ISS Rome



60% of NRLs trained



- Training Course on the Use of BioNumerics Software to analyse PFGE data of Shiga-toxin producing *Escherichia coli*, *Salmonella* and *Listeria monocytogenes* (1 EURL-VTEC edition +3 Joint Editions)



37% of NRLs trained



CONCLUSIONS



- Importance of the participation in the PT after the training session (see the 2 NEW ENTRIES)
- Proficiency test activity confirm its utility for the preparedness of the network for the EFSA-DB
- 80% of the participants in the PT-PFGE6 accomplishing an excellent result
- A consolidate network on Joint analysis has been created- one more Joint Course is planned for molecular typing in 2019
- The introduction of the analysis of the recurring errors will be used by the EURL-VTEC to find the areas needing dedicated training sessions
- The number of Participants in the PT-PFGE rounds demonstrate the interest of the NRLs to the molecular typing (60% of Labs continue the application)

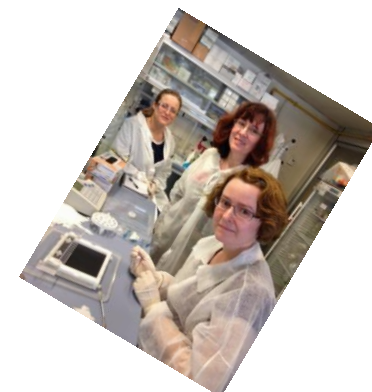
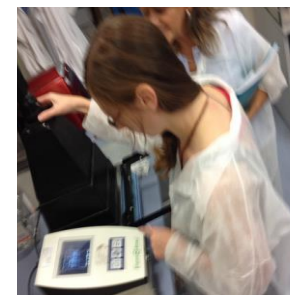
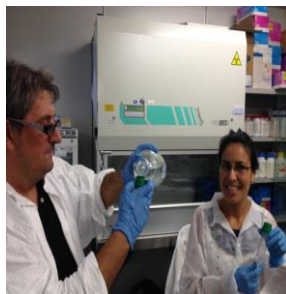
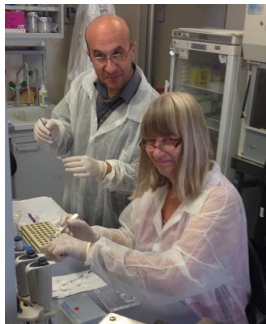
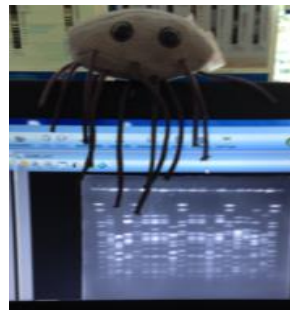
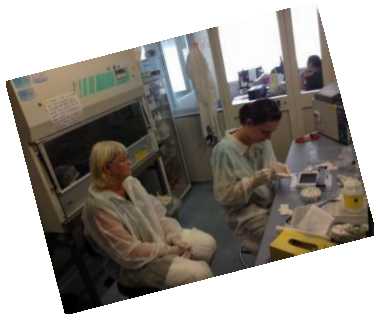


RECOMMENDED

PLEASE DON'T FORGET TO REPORT THE PRESENCE OF
THE PROBLEMS ON TIME
BEFORE THE DEADLINE FOR THE SUBMISSION IN
ORDER TO FIND A SOLUTION TOGETHER



THANK YOU...





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

2012

2013...
SETTING-UP

PRESENT

- 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

- ✓ 11 MS nominated their representative for submitting molecular typing data (for 2016)
- ✓ EFSA DATA-BASE exist and some PFGE profiles are present
- ✓ The curators have already start the activity (end of January 2018)
- ✓ Just 2 MS uploaded the profiles