

EFFICIENCY EVALUATION OF THE EUROPEAN LABORATORIES OF THE ANALYSIS OF ACTIVE INGREDIENTS IN PLANT PROTECTION PRODUCTS

ITPT-01

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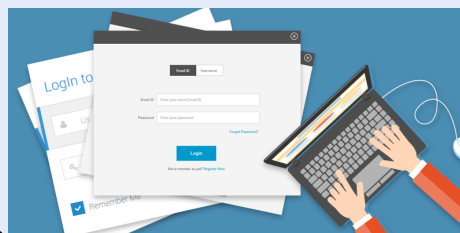
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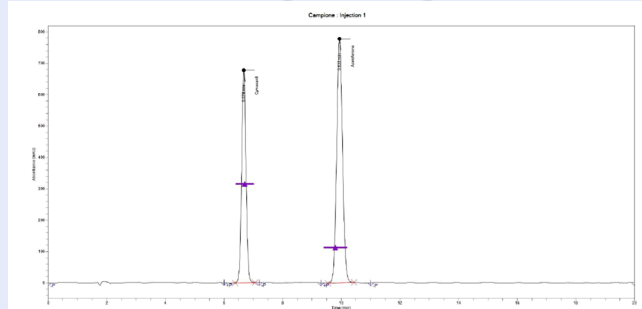
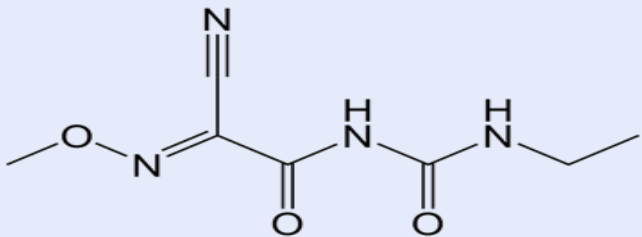
In the 2018 the Italian National Health Institute launched a new challenge in the field of plant protection products, proposing a new proficiency test to different laboratories all over Europe.

Although other proficiency tests on the determination of the pesticide's active substance already exist, this one is the first built up in Europe and taking part to it is totally free. This proficiency test is known with the acronyms of ITPT01 (Italian Proficiency Test, 01 because is the first).

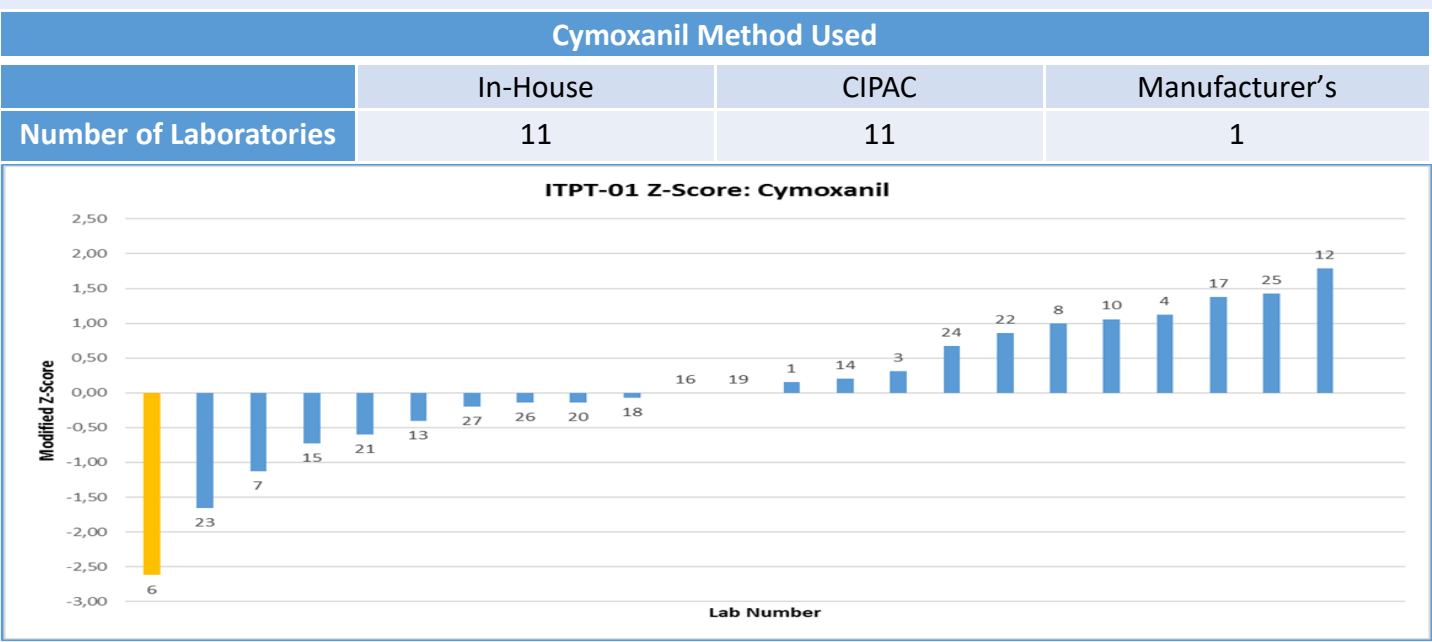
For each participant the aim is to determinate the active substance of the scope with an analytical method that they choose at their convenience and, in the end, send all the results filling a form. They have 4 months to reach the goal, from January to April. The active substances were Cymoxanil, Methomyl and Oxamyl; to analyze them someone used the CIPAC method, someone the manufacturer's method and the one who didn't apply an already existing method or who made some modifications to the existing ones was called In-House method.



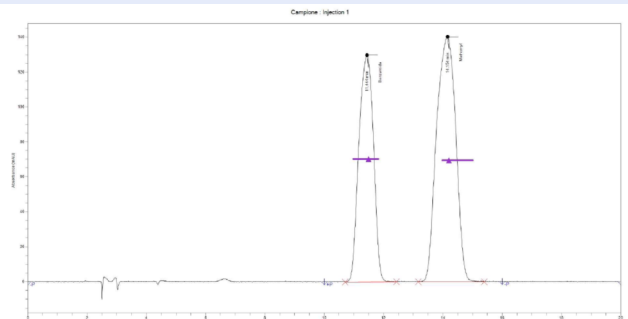
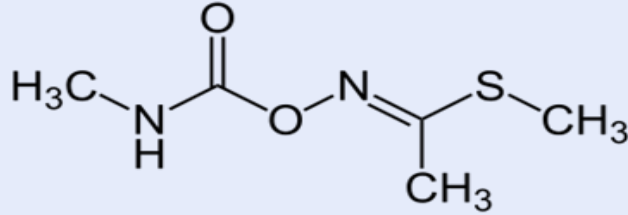
CYMOXANIL



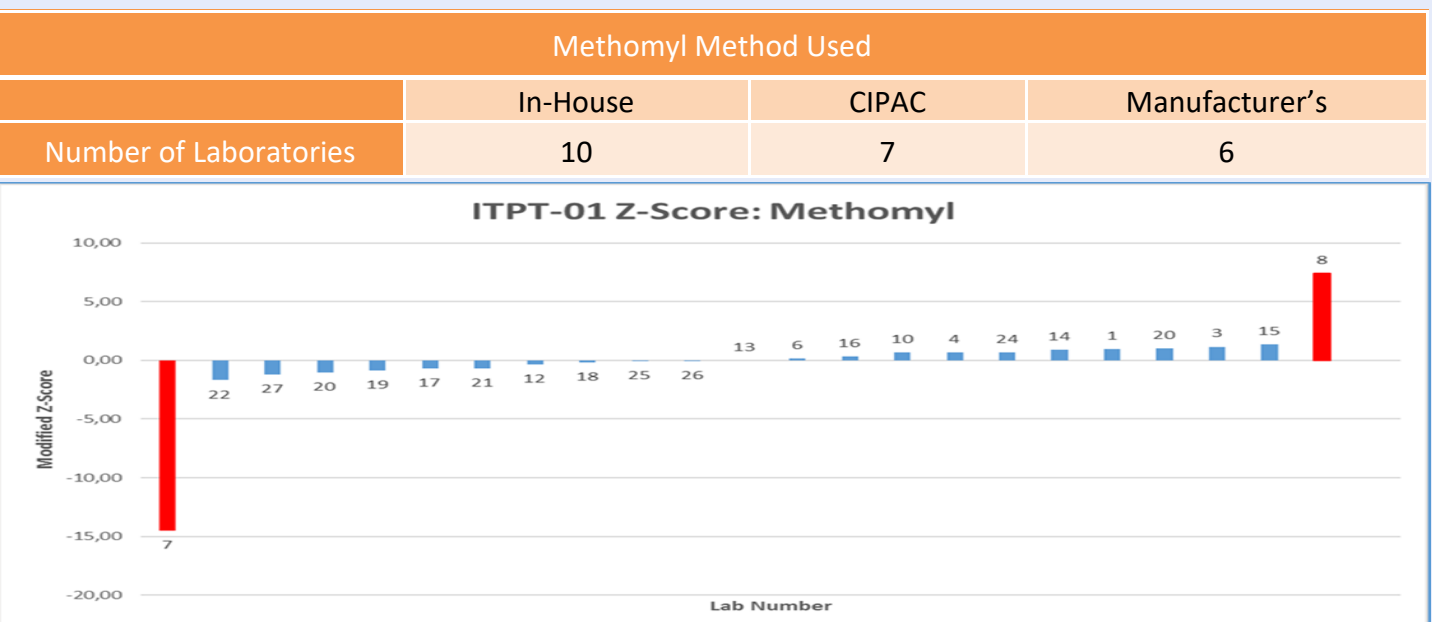
CYMOXANIL Instrumental Parameters	
Mobile Phase	H2O pH 2,8: ACN (75:25)
Column	Zorbax SB C8 4.6*150 mm, 5µm
Injection volume	5 µl
Flow	1 mL/min
Column Temperature	25°C
Run Time	20 min
Ritention Time	Cymoxanil 6,7 min Acetophenone 9,8 min
DAD λ	254 nm
Internal standard	Acetophenone



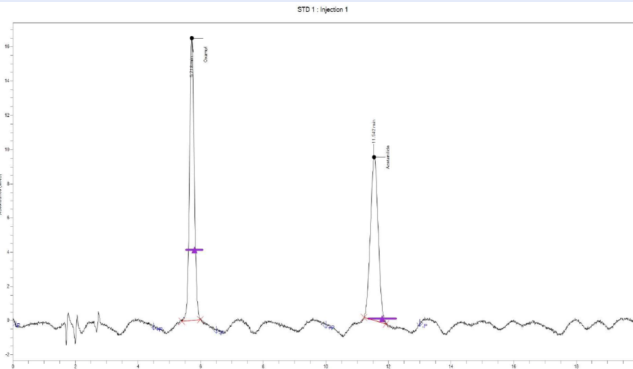
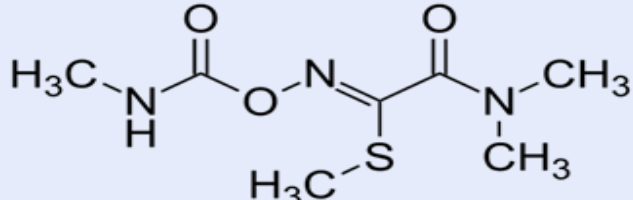
METHOMYL



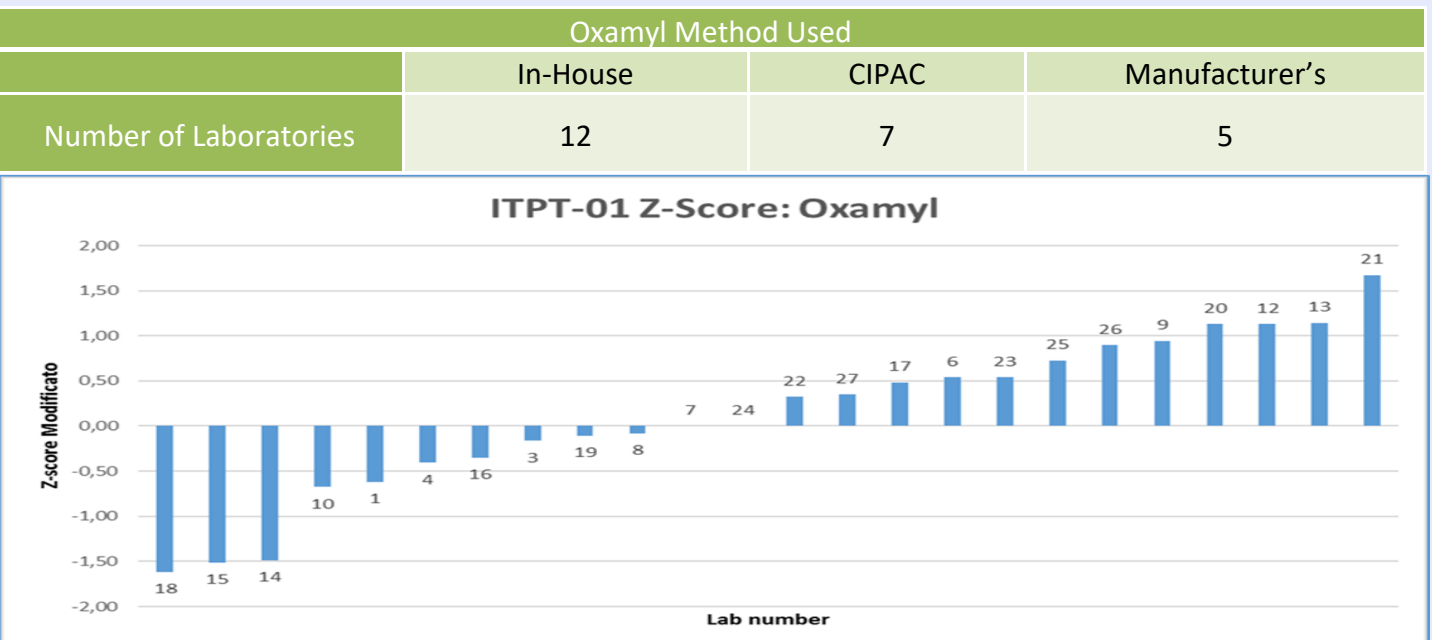
METHOMYL Instrumental Parameters	
Mobile Phase	8% ACN : H2O (V/V)
Column	Zorbax ODS 4.6*150 mm, 5µm
Injection volume	10 µl
Flow	2 mL/min
Column Temperature	45°C
Run Time	20 min
Ritention Time	Methomyl 5,7 min Benzamide 7,8 min
DAD λ	254 nm
Internal standard	Benzamide



OXAMYL



OXAMYL Instrumental Parameters	
Mobile Phase	10% ACN : 90% H2O pH2,7 (V/V)
Column	Zorbax RX C8 4.6*150 mm, 5µm
Injection volume	5 µl
Flow	2 mL/min
Column Temperature	40°C
Run Time	10 min
Ritention Time	Oxamyl 5,6 min Acetanilide 4,6 min
DAD λ	254 nm 300 nm
Internal standard	Acetanilide



In total 26 boxes were sent all over Europe with inside the three commercial products; 11 boxes were sent in different Laboratories all over Italy and 15 boxes outside. All the participants analyzed the active substances by LC-UV and sent their results to ISS. Data has been analyzed for each active substance and it has been used the modified Z-score test for outlier identification.

The outcome of the ITPT01-2018 can be considered satisfactory due to the first PT organized by Italy.

The performance of the laboratories expressed in terms of modified z-score were satisfactory by almost all participants for all substances. Only for the Methomyl two laboratories obtained outlier data and these laboratories should analyzed the reason of their results. Based on the results it can be concluded that the PT was successfully organized also based on the number of participants.

