

European Commission- Tempus Programme

Suez Canal University(SCU)

Faculty of Agriculture

Tempus JEP-30031-2002

"Sustainable Environmental Development in Egypt,
A Curriculum Development Projects"

Activity 1/3

(Practical Placement of SCU students in
European partners institutions)

"Introduction to HPLC Practice"

A training report by

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Period

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- **The objectives of the training program:-**

- 1- To learn how I can deal with the HPLC.
- 2- The basic steps to operate the HPLC.
- 3- How I can measure the efficiency of the different components of the HPLC.
- 4- How I can deal with the results.
- 5- To know how I can use the HPLC in dairy products to analyze the flavor components or acids.

- **The activities which carried out during the training:-**

- 1- we have a lecture on laboratory operation (safety and quality).
- 2- Introduction to HPLC (Basic principle & components & method development & Mobile phase preparation to HPLC work).
- 3- Dealing with HPLC simulator.
- 4- How can we prepare the HPLC for work (starting operations- Flush and purge – column conditioning – programming)
- 5- We weighted and filtered some standards to qualify the components of HPLC (pump – injection system – column – Detector) by measuring the following parameters:-
 - 1- Repeatability of injection system

- 2- Linearity of injection system
- 3- Carry over by injecting the mobile phase solution after the injection of different concentrations of caffeine (as a one of the standards).
- 4- Column test and its calculations.
- 5- How can we prepared a sample by solid phase extraction as an example for method preparation.
- 6-the qualification and quantification analysis for the sample.
- 7- How we can ensure that the used method to extract some minor components is suitable for this kind of sample.

• **The impact of the training on the skill development & knowledge:-**

- 1- Increasing the knowledge about HPLC and its important applications in my scientific field (dairy science and technology) such as making a flavour profile for every kind of cheese may help for evaluating the degree of quality or to measure the minor components which correlated with the quality of different types of yoghurt.
- 2- In my Ph. Degree, I will used gas chromatography/ mass spectroscopy to identify and quantify the flavour components of Trappist cheese, and HPLC for measuring the different organic acids of cheese through the ripening.
- 3- What I learned will help me in teaching some courses as Dairy Chemistry and Dairy products analysis.

4- We hope to apply what we know about HPLC in our country and help others to let the dealing with HPLC easier.

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