

Chemistry ... What a Pizza!!!



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Introduction

With the aim of increasing the interest, motivation, and active involvement of our students in the processes of learning and studying, we have developed a didactic module suitable for learning important concepts in Biology and Chemistry. Through the module, we wanted to introduce our students to the study of chemistry by means of daily life phenomena. Pizza is a food, very popular among teenagers and featuring strongly, together with pasta dishes, in Italian gastronomy.

Scientifically, this grade 10 (second year of secondary school) science (biology and chemistry) module is about fermentation and chemical reactions, while the educational goals are to increase student motivation, self-esteem and social abilities through group work and experimental work. This activity also stimulates observation and reflection skills of students through requiring them to face a practical problem (how to make a good pizza) using a scientific method of investigation and an experimental approach.



Specific objectives of the subjects:

- To use the inquiry scientific method to study a phenomenon (the leavening);
- To identify the variables that influence the success of a complex phenomenon;
- To study the effect of some parameters (such as the temperature, the sugar, the change of the ingredients), taking constant other variables, and to identify the most suitable experimental tests to verify the initial hypothesis.

The work was carried out in laboratories of chemistry and science, and in a kitchen for cooking pizza. The high school students have performed the task by deepening the study of nutrients and transformations that occur during the leavening and cooking of a pizza, focusing on the fermentation of Saccharomycetes. The high school students have performed the task by deepening the study of nutrients and transformations that occur during the leavening and cooking of a pizza, focusing on the fermentation of Saccharomycetes.



The project has proven successful; the majority of students demonstrated great interest both in the research and in the reprocessing phase. The experimental activity allowed also to attend the laboratory that otherwise would not be used during the regular school year.

Bibliografia

The chemistry experience has been presented at the International Conference on Chemistry Education in Rome, July 2012.

Bolte, C., Streller, S. (2011). Online at: http://lsg.ucy.ac.cy/esera/e_book/base/ebook/strand5/ebook-esera2011_BOLTE_1-05.pdf

Bolte, C., Streller, S., Holbrook, J., Rannikmae, M., Mamlok Naaman, R., Hofstein, A., Rauch, F. (2011). Online at: http://lsg.ucy.ac.cy/esera/e_book/base/ebook/strand5/ebook-esera2011_BOLTE_2-05.pdf

Conclusion

The experimental activity allowed also to attend the laboratory that otherwise would not be used during the regular school year. Students expressed their appreciation for this kind of work which is different from the usual activity, they also provided interesting suggestions for the experimental activity. A gradual increase in motivation to study and research was noticed.