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Cooking with alternative proteins

Sustainable Cooking for the Planet

SUSCOP

Introduction:
The goal of the Suscop project is to **raise awareness** about the impact of our eating habits on the environment and **to train future cooks** to work with alternative proteins.

Therefore a teaching & training module is developed. Getting a better understanding of the reasons why eating habits should change and giving students tools to make attractive dishes with vegetal or animal source foods, like insects.

Training Meeting in Bilbao
In June, teachers from cooking departments of VET centers in the Netherlands, Finland and the UK met at the Leioa cooking school in Bilbao. The goal of this training event was to lay the theoretical foundation of the teaching and training module.

Different presentations of the project were made, one was a talk offered by Joaquín Gómez Estaca specialist in nutrition of the CSIC (The Spanish National Research Council, this is a State Agency for scientific research and technological development).

Joaquín González Estaca made an interesting presentation entitled: "The potential of insects for food production"
The world's population will grow up to 10 billion people in 2100.

This means sustainability problems associated to food production. We will need more energy, water and land and the resources are limited apart of the environmental cost.

Mr. Gonzalez Estaca also explained the different methods to assess the environmental impact of current human activities. Faced with these problems, we propose the use of insects as a source of proteins. Insect production has a lower environmental impact and a good nutritional quality.

https://www.gastronomiavasca.net/en/admin/recipes/25

SMOKED PORRUSALDA CREAM WITH CRICKETS

Partidas*	Cold line - 5th range dishes
Family	
Main technique	
Elaboration time (min)	
Tags	

INGREDIENTS FOR 10 PORTIONS/UNITS

Ingredient	Quantity	Technique	Days	Partida*
Garlic	1.0 ud	Minced	1d	Cold room vegetables
Onion	0.2 kg	Cubes	1d	Cold room vegetables
Carrot	0.1 kg	Cubes	1d	Cold room vegetables
Leek	4.0 Bunch (6.0 ud)	Whole peeled	1d	Cold room vegetables
Potatoe	0.2 kg	Cubes	1d	Cold room vegetables
Intense olive oil	0.2 l			
Sal ahumada	4.0 g			
Loaf bread	2.0 ud			
Vegetable stock	0.5 l			
Parsley	1.0 Bunch (250.0 g)	Minced	1d	Cold room vegetables
Grillo con cebolla y salsa barbacoa	30.0 g			

ELABORATION

1. Make a traditional porrusalda.
2. Crush the bread crumbs and the parsley to simulate "green grass". Dry in the oven at 110 C°.

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Experimenting in the kitchen
We not only made new recipes with alternative proteins but also learned about the famous Basque cuisine.

Lectures on the benefits of the vegetarian diet and more sustainable food systems:

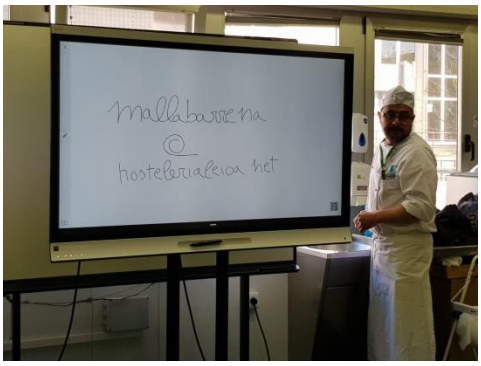
- Plenty of fiber
- Plenty of minerals
- Little of cholesterol

In the project's website which is under construction, we will present the result of our work, an E-book with recipes and a module for teachers. Examples of dishes:

- Escalivada & Cricket Coca
- Whole rice paella with grasshoppers and milk mushrooms.
- Carrot cake with crickets foam and coconut-curry ice cream
- Portobello burger with worms
- Vegan pickle skewers
- Coconut Thai soup
- Vegan Souvlaki
- Haricot beans stew with boletus edulis
- Roasted tomato filled with ratatouille
- Black sesame falafel with worms

Josu Birritxinaga, teacher in the cooking department of Leioa, explains to the attendees one of the recipes they have made at school using alternative proteins. In this case it is a typical

Basque dish called "Porrusalda" (Leaks with potatoes) but adding crickets as animal protein:



"Porrusalda" (Leaks with potatoes) but adding crickets as animal protein.

3. Serve the porrusalda with the grass and the crickets on top.

> INGREDIENTS FOR VEGETABLE STOCK (0.5 L)

Ingredient	Quantity	Technique	Days	Partida*
Onion	0.1 kg	Halves		Cold room vegetables
Carrot	0.05 kg	Halves		Cold room vegetables
Green leek	0.15 ud	Sieve		Cold room vegetables
Parsley	0.001 g	Whole leaves		Cold room vegetables
Water	0.5 l			

- Wash the green part of the leek and chop it into big pieces.
- Peel and chop the onions into large chunks.
- Wash, peel and cut the carrots into 2 or 3 chunks.
- Put all the clean and cut ingredients into a pan with cold water. Bring to a boil. Reduce the heat and simmer skimming off any scum which rises up for about 2 hours.
- Strain and set aside the stock.
- Discard the vegetables.

NUTRITIONAL INFORMATION

Energy	14417.62 kcal	Proteins	1030.16 g
Carbohydrates	1281.19 g	Fiber	196.02 g
Lipids	559.86 g	Saturates	125.44 g
Monounsaturated fatty acids	425.29 g	Polyunsaturated fatty acids	6.31 g
Cholesterol	0.1 mg	Calcium	1326.73 mg
Iron	23.24 mg	Zinc	5.64 mg
Vitamin A	1681.43 ug	Vitamin C	467.28 g
Folic acid	1636.43 ug	Salt (Sodium)	246.32 mg
Sugars	515.82 g		

WARNING: These values are calculated including edible portions

ALLERGENS

Gluten Milk Sesame Soy

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Theory: FOOD CHOICE AND NEOPHOBIA

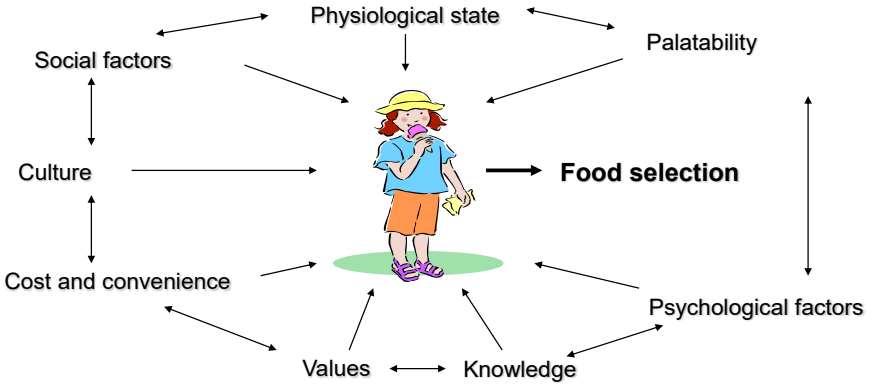
There is some controversy and difficulties in the use of insects as proteins. One of the big problems that one of the speakers tells us is that of neophobia. It is a difficult barrier to overcome because we feel disgust, there are cultural barriers also when eating insects and finally we do not know if all insects are edible or not.
Studies have been conducted regarding the willingness we have to consume them or not, these being the results:

- One out of five meat consumers claims to be ready to adopt insects.
- Males are 2.17 times more likely than females to adopt insects.
- Consumers who plan to reduce meat intake are 4.51 times more likely to adopt insects
- It seems Norther Europeans are more adoptable to eat insects than Southern Europeans.

So there are many factors influencing our food choice.

The question is: how to overcome the aversion to insect consumption?

- People are often curious to taste, but sensory liking might not be enough, but is has to be attractive to watch
- More positive attitude (lower disgust) reactions could be achieved by; developing insect-based products that are tasty
- embedding them in positive gastronomic experiences
- information is important for people to change their habits
- Choice of recipes and the way in which dishes are presented; can strongly affect the feeling of discomfort. Important to invest in sensory, gastronomic aspects and advertising messages.



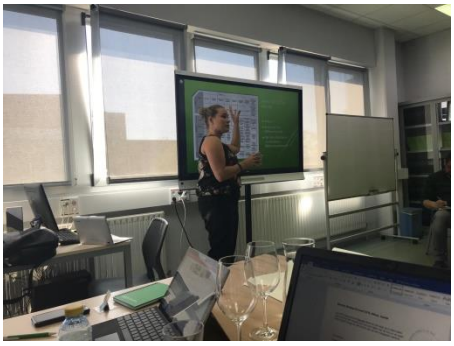
FOOD AND ENVIRONMENT

According to the IPCC 2018 report, the clinical change is inevitable , we hardly have time to react. The food production is a significant contributor to the climate change. The total amounts of water in order to get animal proteins is really high and totally inefficient. Anyway meat consumption has increased in recent years.

What can be done? Changes in food consumption; increase the consumption of vegetables, seasonal foods, organic and local food and Insects.

FOOD SAFETY AND INSECTS

The current laws of the different European countries do not fully reflect the possibilities related to insects, add to this that in each country the provisions are different.



What insects can be eaten? Basic principles:

- Farmed
- Insects that have died naturally should not be used as food
- No part may be removed
- Feed: plant based products, gelatine, milk and egg products

What are the potential risks in food in general?

- Microbiological risks;
- Chemical risks; little is known
- Allergens ; current knowledge insufficient.

Faced with possible allergies, correct labeling is very important.

It should be mandatory to include this in the label: Insects may cause allergic reactions. Cross-reactivity is possible if you are allergic to crustaceans and/ or dust mites.

The **next step** of the project will be a meeting in ROC Landstede in Harderwijk, The Netherlands. Here we will be working mainly in the kitchen, cooking the recipes we think that are healthy, environmental friendly and TASTY.

If you would like to know more about the project or the results, please get in contact with the coordinator:

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