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LESSON PLAN LO6-D-2

**Know the chemical composition of fortified food
and correctly perform fortification in meals**

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Introduction

This template would allow to formalize a suggested approach to the teaching of LO6-D-2. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO6-D-2

LO6-D-2

Know the chemical composition of fortified food and correctly perform fortification in meals

KNOWLEDGE

He/she is able to:

- Describe and compare different techniques for fortifying food
- Recognize how fortified food was prepared
- Describe the difference of chemical composition of fortified food and enriched food
- Describe the difference of mandatory fortification and voluntary fortification
- Describe US and EU Regulation on the addition of vitamins, minerals, and other substances to foods
- Identify specific fortification for each food to correctly combine the ingredients
- Identify the nutritional need of the added component to fortified food to determine the exact quantity of ingredient

SKILLS

He/she is able to:

- Select the proper technique for fortifying food to perform tasteful and balanced menu and apply them
- Evaluate dishes after consistency changes
- Apply international rules to the creation of meals

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

- Collaborate with kitchen team to ensure the meals are rightly fortified
- TAKE RESPONSIBILITY for the fortification in meals
- Work as part of a team to prepare fortification in meals
- Provide responsible explanations to teams about the necessity of the changes in the meals



Lesson Plan LO6-D-2

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

Preliminary to: LO6-A-B-1 and LO6-D-3

Linked to: LO6-A-B-2 LO6-D-1

EQF LEVEL: EQF4

PREPARATORY LOs

These LOs should be introduced before addressing LO6-D-2

- LO6-A-B-1 Know the main cooking techniques and select the appropriate ones for the different healthcare contexts in order to maintain the nutritional properties and maximize the nutritional value of the ingredients
- LO6-D-3 Apply creative and innovative kitchen techniques to adapt recipes for people with taste changes or consistency adjustments (including hot, cold, crisp, soft, moist, dry)

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture:	face to face or online
Individual study:	face to face or online
Group work:	NO
Lab:	face to face
WBL:	face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Describe and compare different techniques for fortifying food	Description of the main vehicles for food fortification: large-scale food fortification, biofortification and point-of-use or home fortification). The context in which these strategies are preferentially implemented are also discussed.	Olson R. et al. Food Fortification: The Advantages, Disadvantages and Lessons from Sight and Life Programs References. <i>Nutrients</i> 2021, 13, 1118. https://doi.org/10.3390/nu13041118 Slides
Recognise how fortified food was prepared	Description of the main commercially available fortified food and how they are prepared. Of note, the addition of vitamins and minerals to unprocessed food products (fruit, vegetables, meat, fish) and alcoholic beverages is prohibited.	
Describe the difference of chemical composition of fortified food and enriched food	Description of enriched food in which nutrients that were lost during food processing are added back (ex. certain vitamins lost in processing wheat to make white flour). Description of fortified foods in which vitamins or minerals are added to a food that originally does not contain these elements (ex. adding vitamin D to milk).	Slides

Describe the difference of mandatory fortification and voluntary fortification	Description of mandatory fortification programs regulated by the government (ex. drink water, wheat flour, edible oils, milk). Description of voluntary fortification performed by food manufactures (ex. breakfast cereals)	
Describe the impact of fortified food on human health	Describe the benefits of food fortification not only in the control and prevention of micronutrient deficiencies among vulnerable populations, but also to reduce the burden of some non-communicable chronic diseases.	Slides
Describe US and EU Regulation on the addition of vitamins, minerals, and other substances to foods	The key messages of International Guidelines are described and particular emphasis will be put on storage of fortified food to prolong their shelf-life. Attention will also be paid to the understanding of the nutritional labels. E.g. an example of a list of activities that the kitchen staff should carry out in each shift	Home Fortification Technical Advisory Group. Programmatic Guidance Brief on Use of Micronutrient Powders for Home Fortification. Available online: https://sites.unicef.org/nutrition/ (accessed on 8 September 2020) Guidelines for food fortification with micronutrients. Lindsay Allen, Bruno de Benoist, Omar Dary, Richard Hurrell Published by: World Health Organization (2006) Stable URL: https://www.jstor.org/stable/resrep35660.9
Identify specific fortification for each food to correctly combine the ingredients	E.g. a list of tools to evaluate staff capacities and a description of their main features	
Identify the nutritional need of the added component to fortified food to determine the exact quantity of ingredient	E.g. a list of tools to evaluate staff capacities and a description of their main features	Links



SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table:

- Lab hands-on activities
- Sharing of pdf documents
- Implementation of experimental protocols