Proposal for an international competence-based training unit on EQF level 4

Product 5

Among the following 3 partners: CIFP A Granxa, Spain *represented by* Pablo Saa
LWG Veitshöchheim, Germany *represented by* Peter Schwappach
Wine school Krems, Austria *represented by* Rainer Vogler

	Description for all partners	*Specific notes for partner A, E, G*
Name of training unit	**Clearing and bottling**	
Description of skill / comptence	Students can handle cellar equipment and machines for filtration and bottling and can, if necessary, decide for a specific system.	
Duration	1 week	
Date(s)	Winter 2014 including travel days (lessons Mon – Fri)	
Number of students	5 students sent away to each partner	*If a teacher comes: possible*
Selection of students	Min. age 18 years	*A to G: maybe 17 years*
Involvement domestic students	10 students are abroad, the rest of class is trained with students from abroad (10 from 2 countries)	
Accommodation	In Austria: boarding house at school In Germany: ?? In Spain: boarding house is full? If not hosting in the families of domestic students	

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Travel	To Spain: flight to Airport Porto, bus to	
Finance		
Dealing with language barrier	English as learning language If necessary, host school uses (partly) an additional teacher (for English)	
L. outcome 1:	**Selecting filter system**	*Filters borrowed from technical companies*
Learning goal	Students know different filter systems (sheet filter, Kieselgur filter, filtro de vacio = Vakuumfilter, Kerzenfilter = amicrobico filtro, cross flow filter), their advantages and disadvantages and their purpose	
Learning methods	Presentation with images, demonstration in cellar, handout	
Lessons (number)	8	
Assessment - methods	Test	
Assessment - criteria	Result of the test.	
Notes		
L. outcome 2:	**Handling filter systems**	
Learning goal	Students can prepare and handle the filter systems including necessary other machines and devices (as pumps, hoses, connections)	
Learning methods	Demonstration, practical handling of each student and other students “assess” him / her Excursion to 2 wineries	
Lessons (number)	12 (training) + 4 (excursion) + 4 (assessment)	
Assessment - methods	Students gets 1 system and carries out the process or part of the process (depending on the time used 15 min / student), teacher / trainer assess according to a prepared checklist	
Assessment - criteria	The results of the cecklist.	

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Notes		
L. outcome 3: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria* *Notes*	**Handling bottling & labelling devices** Students can prepare and handle a bottling and labelling device including necessary other machines and devices Demonstration, practical handling of each student and other students “assess” him / her Excursion to 2 wineries 8 + 4 Student carries out a part of the process, teacher / trainer assess according to a prepared checklist The results of the checklist.	*Cellar cifp A Granxa* *Bottling line :filler , corker, labeller.* *Millipore filter*
L. outcome 4: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria*	**Cleaning and sanitizing the bottling line (filler and corker) and the millipore filter** Students can prepare the products and devices (as pumps, hoses, connections) for cleaning and sanitizing the bottling line and the Millipore filter. Microbial monitoring with swabs and samplers. 4 The teacher does a demonstration in cellar, practical handling of each student and other students “assess” him / her. Student carries out a part of the process, teacher / trainer assess according to a prepared checklist The results of the checklist.	*Cellar cifp A Granxa* *Bottling line :filler , corker, labeller.* *Millipore filter*

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Notes		
Grading	100%, positive >50%	
Personal transcript	Europass (should include social aspects and descriptions as well) Include the ECVET points	
ECVET points	2 points	
Other		

Note ECVET points: *the total of a qualification (e.g. skilled worker for viticulture and oenolgy on EQF level 4) totals 240 points, that is a maximum of 60 points for a year of full-time VET*.

Note Personal transcript: *written documentation for the learner including the learning outcomes, the grading and the ECVET points.*

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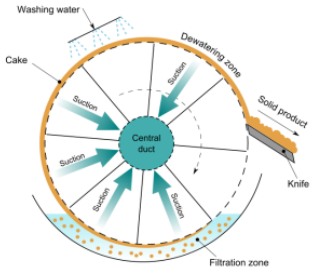
Earth filter

It is used to clarify wines very turbid in the early stages of elaboration.

Advantages	Disadvantages
☺ The equipment is not very expensive. ☺ The diatomaceous or kieselgur earth for filtration are cheap. ☺ Useful for turbid wines. ☺ It has a low maintenance.	☹ Its management requires an apprentice-ship and control during the process. ☹ The lands are pollutants and must be removed by a waste manager. ☹ The dust can affect the health of the manipulators.

Rotary vacuum filter

Used for sludge recovery and lees.



Advantages	Disadvantages
☺ Improves performance by leveraging the dregs and lees. ☺ The diatomaceous or kieselgur earth for filtration are cheap. ☺ Easy to handle. ☺ Significantly reduces the amount of waste to be managed.	☹ Expensive: relative because it is soon amortized. ☹ Removes carbon dioxide wine facilitat-ing oxygen dissolution. ☹ Environmental pollutant. ☹ The dust can affect the health of the manipulators.

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Cellulose plates filter

It can be used in different stages of elaboration with not too turbid wines.

Advantages	Disadvantages
☺ The equipment is economical. ☺ The cellulose plates are cheap ☺ Very easy to handle ☺ It is versatile because it can be used for roughing, brightening and sterilization of wines. ☺ For wineries that produce few or many liters.	☹ The plates are pollutants and must be removed by a waste manager. ☹ Not valid for highly turbid wines. ☹ They cause increased oxidation of the wine.

Membrane filtration by cartridges

Its use is restricted to pre-bottling. Wines need to present a clogging index less than 20 (10 if it is modified siltation).

Advantages	Disadvantages
☺ Very easy to handle. ☺ Very useful for white wines and sweet wines leaving them sterile and avoid re-fermentation.	☹ The cartridges are very expensive, delicate and limited duration. ☹ Useful only for wineries that produce many liters.

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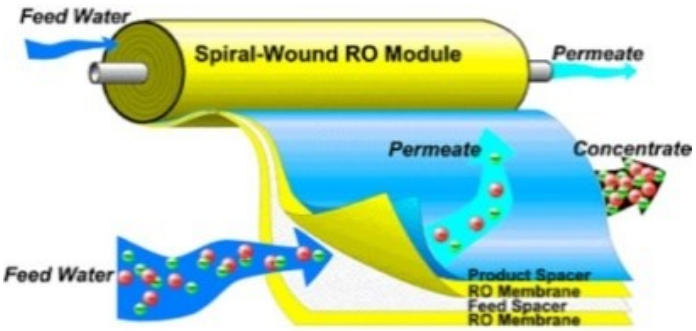
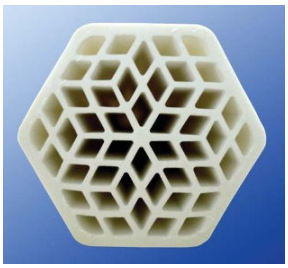
Tangential filter

It is increasingly used in wineries of large capacity, due to its performance and autonomous operation. Can be used as single filter of the winery.





Advantages	Disadvantages
☺ Easy, all automated with programming possibility. ☺ The pores don't get obstructed. ☺ It is very durable. ☺ It can even supply the membrane filtration by cartridges.	☹ The equipment is very expensive ☹ For wineries that produce many liters. ☹ You can warm the wine by the friction caused by the speed if not handled correctly.

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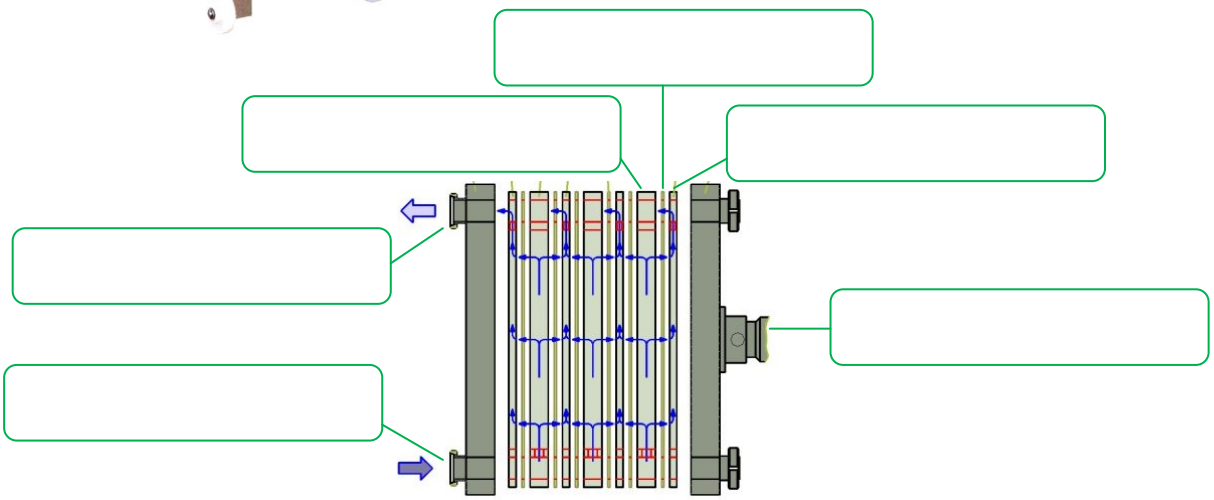
Cellulose plates filter



Advantages	Disadvantages
	XXXXXXX
	XXXXXXX

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Technical principle

4 – 5 mm strong filter sheets are packed between plates. The sheets have a turbid side and a clear side. The filter sheets work on two principles:

1. Sieving
2. Absorbing

The plates are alternating: one turbid plate, one clearing plate (that collects the turbid substances). At packing the sheets, the rough sides have to meet the turbid wine. If you screw the filter too strong, the flow of wine is blocked and the sheets can filter less substance.

Pore type of sheet	…is used for
EK	

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Using the right filter

Situation 1

We have to filter 500 litres of dregs, and you want at least 60% clear must (minimum efficiency 60%).

QUESTIONS

1. Which filter(s) can be used?
2. What additional equipment, devices or material would you need?
3. How can you manage the waste according to the law?

ANSWERS

1. Rotary vacuum filter.
2. No equipment or devices, material: Perlite for filtration.
3. Composting

Situation 2

We have 200 litres of red wine that has finished the malolactic fermentation and must be filtered roughly.

QUESTIONS

1. Which filter(s) can be used?
2. What additional equipment, devices or material would you need?
3. How can you manage the waste according to the law?

ANSWERS

1. Filters
    a. Diatomaceous earth filter
    b. cellulose plate filter
    c. tangential filter.
2. Materials:
    a. Diatomaceous earth
    b. Racking pump, hoses and hoses connectors; cellulose sheets 30 diameter pore size, water or citric acid to rinse the filter.
    c. ----
3.

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Situation 3

We want to bottle 1000 litres of a white wine with tartaric stabilization already done. It's silting (clogging) index is 30 and should be 22.

QUESTIONS

1. Which filter(s) can be used?
2. What additional equipment, devices or material would you need?
3. How can you manage the waste according to the law?

ANSWERS

1. Filters:
    a. Cellulose plate filtration with 100 diameter pore size.
    b. Amicrobic filtration with a cartridges filter with 2 filter housing minimum and 1 for the water.
    c. Tangential filter.
2. Equipment: Screw pump or spiral pump, hoses and hoses connector.
   Materials: Cellulose sheets 100 diameter pore size. Cartridges of 1.2, 0.45 pore size.

Situation 4

We want to bottle 1000 litres of a red wine with tartaric stabilization already done.

QUESTIONS

1. Which filter(s) can be used?
2. What additional equipment, devices or material would you need?
3. How can you manage the waste according to the law?

ANSWERS

1. Filters:
    a. Cellolose plate filtration with 100 diameter pore size followed by Amicrobic filtration with a cartridges filter with 2 filter housing minimum and 1 for the water
    b. Cellolose plate filtration with 100 diameter pore size
    c. only Tangential filter.

2. Equipment: Screw pump or spiral pump, hoses and hoses connector.
   Materials: Cellulose plates 100 diameter pore size. Cartridges of 1.2, 0.6 micras pore size.

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Assessment of handling filter systems

FAMILY NAME:_____ FIRST NAME:_____

Time limit: 12 min *max.: 22 points*

Preparing a Filter

- ☐ Choose the most suitable pump for the task.
- ☐ Choose the most suitable filter for the task.
- ☐ Connect pipes to the filter using the right kind of gaskets and clamps.
- ☐ Insert the sheets or the correct filter material into the filter in the proper way.
- ☐ Double check that all connections are tight and there are no leaks prior to running the wine through the filter.
- ☐ Once everything is in place, tighten the hand screw so that there is sufficient pressure to seal the system while it is running
- ☐ Choose among the different liquid solutions available the right ones and their sequence, in order to prepare the filter to the process.

	points
☐ use of the peristaltic pump	☐ 2 points
☐ connect pipes to the filter using the proper kind of gaskets and clamps.	☐ 2 points
☐ double check that all connections are tight and there are no leaks prior to running the wine through the filter.	☐ 2 points
☐ Sheet filter: select correct sheets and insert it into the machine in a rough-smooth-smooth-rough pattern, starting with a rough side facing the endplate at the pump side. **or:** Kieselgurfilter: calculate correct amount of Kieselgur and let it circulate in the filter	☐ 4 points
☐ Tighten of the hand screw so that there is sufficient pressure to seal the system while it is running	☐ 2 points
☐ preparation of the filter to the process using: citric acid solution then water and finally wine.	☐ 4 points
☐ Sensory check of effluent liquid for neutral taste	☐ 4 points
☐ Cleanliness of work area and accident prevention	☐ 2 points

Total: _____/22

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Correction scheme for teacher

use of the peristaltic pump	2
use of wrong pump	0

connect pipes to the filter using the proper kind of gaskets and clamps	2
connect pipes to the filter using the proper kind of gaskets and clamps, pump connected in wrong direction	1
connect pipes to the filter using the wrong kind of gaskets and clamps	0

double check that all connections are tight and there are no leaks prior to running the wine through the filter	2
not all connections are checked for leaks	1
no check at all	0

- **sheet filter**

use of correct filter material and installation in proper way	4
use of correct material and correct installation but wrong start	3
use of correct material but wrong installation	2
use of wrong material but proper installation	2
wrong selection and wrong installation	0

- **Kieselgurfilter**

correct calculation and circulation long enough	4
wrong calculation but circulation long enough	2
correct calculation but circulation too short	2
wrong calculation and circulation too short	0

- **Kerzenfilter/ amicrobico filtro/ membrane filter**

use of correct filter material and installation in proper way	4
use of wrong material but proper installation	2
wrong selection and wrong installation	0

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Tighten of the hand screw for sufficient pressure	2
deviation of correct pressure less than 20%	1
deviation more than 20%	0

Correct preparation: citric acid solution, then water, finally wine	4
preparation without citric acid	3
correct preparation, but too short time	1
no use of citric acid and water	0

Sensory check of effluent liquid for neutral taste	4
sensory check is wrong	1
too early beginning of wine filling	0
no sensory check	0

Cleanliness of work area and accident prevention	2
Cleanliness of work area, no accident prevention	1
no cleanliness	0

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Proposal for an international competence-based training unit on EQF level 4

Product 5

Among the following 2 partners: TŠC Nova Gorica, BIOS Šempeter *represented by* Aleš Makuc
VM DASZK SZKI Teleki Zs. A. School *represented by* Imre Muth

	Description for all partners	***Specific notes for partner ……***
Name of training unit	**Sensory evaluation**	
Description of skill / competence	Students will have a knowledge about the sensory evaluation of different wines	
Duration	One week, simultaneously in both partner schools	
Date(s)	Flexible, preferably during January or February	
Number of students	3-5	
Selection of students	On the basis of prior knowledge, working attitude, as well as competence in English language	
Involvement domestic students	The whole class of domestic students is involved	
Dealing with language barrier	English lessons will be included covering the vocabulary of the topic (cooperation of the English and technical teachers when preparing materials)	

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L. outcome 1: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria* *Notes*	Students gather theoretical knowledge on the recognition and evaluation of the characteristics of various wines Theoretical presentation of teaching material by frontal presentation by teachers, followed by student tasks to find out information with the help of literature (books, magazines, Internet). Presentation will be the same in both schools (work sheets the same, test papers the same). 2 lessons a day, a total of 10 lessons. Short test papers at the end of the week. Theory test results and the quality of student tasks.	
L. outcome 2: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria* *Notes*	Students are able to use in practice the obtained factual knowledge in the evaluation of particular wines. Practical work done in the laboratory and in the degustation room. 3 lessons a day, a total of 15 lessons. Student recognize and evaluate wine features, and present the results to the class and teachers. The quality of the presentation and the validity of the information presented.	
L. outcome 3: *Learning goal* *Learning methods*	Students learn the related professional English vocabulary and language necessary to describe the result of the wine evaluation.	

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Lessons (number) *Assessment - methods* *Assessment - criteria* *Notes*	Class lessons. 1 lesson a day, a total of 5 lessons. No test papers on professional English (test paper on professional English is combined with theory test paper), the language knowledge is assessed during the oral wine presentations. The results of test papers and the language quality of the oral wine presentations.	
Grading	Results given in percentage, as well as a written evaluation.	
Personal transcript	Written certificate describing tasks and learning outcomes	
ECVET points	1 point	
Other	Accomodation: student hostel or host families. Transport: no empty bus - the same bus takes one group and bring the other in turn. At the end of the week the other school does the same round. Worksheets: the schools work on them together, exchanging info via e-mails. Timetable for the week: six lessons a day, five days a week. Mornings: theory and English lessons, followed by practical sessions (degustation, laboratory work). Afternoons: visiting nearby wineries and places of interest, sport activities to help socializing. Test papers: multiple choice questions, gap-filling with extra options that are not needed, gap-filling with empty gaps. English and theoretic knowledge tested in the same paper.	

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Sensory evaluation-based training unit on EQF level 4

Product 5

Among the following 2 partners: ŠC Nova Gorica, BIOS Šempeter *represented by* Aleš Makuc
VM DASZK SZKI Teleki Zs. A. School *represented by* Imre Muth

THEORY

Exercise 1: Wine faults

NAME	FEATURES	REASONS	PREVENTION/CORRECTION
mouldy taste			
oxydation			
volatile acidity			
SO_2			
untypical ageing note			
filter taste			
Brettanomyces			
reduction			

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cork taint			
H_2S			
vinegar			

List of possible features:

List of possible reasons:

List of possible preventions/corrections:

Exercise 2: Key features of varieties

VARIETY	FEATURES
Chardonnay	
Sauvignon blanc	
Riesling	
Muscat Ottonel	
Merlot	
Pinot Noir	

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List of features: elderberry, bitter almond, muscat-grape, forest fruit, spicy mushroom smell, butter…..

Exercise 3: Aromas

GENERAL CATEGORIES	SPECIFIC AROMA
Fruity	
Floral	
Spicy	
Wood	
Charamelized	

List of specific aromas:

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PRACTICE

Exercise 4: Wine service

Situation: Guest in the restaurant

Take the bottle from the table and serve it in the proper way including glasses, opening, pouring and describing.

ASSESMENT LIST FOR PRACTICAL WORK

1.	Choosing the correct bottle from the table	
2.	Showing the bottle to the guest	
3.	Opening the bottle properly	
4.	Checking the cork	
5.	Pouring to himself/herself to taste	
6.	Pouring to the guest who ordered	
7.	Pouring to all guests after ok	
8.	Describing the wine orally (smell, clarity, aroma, taste, features…)	

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Proposal for an international competence-based training unit on EQF level 4

Product 5

Among the following 3 partners: Colegiul Agricol "Gheorghe Ionescu-Sisesti" *represented by* Loredana Duca
Ecole d'ingénieurs de Changins *represented by* Christian Guyot
Istituto Tecnico Agrario Statale C. Ulpiani *represented by* Roberto Bruni

	Description for all partners	***Specific notes for partner ……***
Name of training unit	**Ripening of the grape and harvest**	
Description of skill / competence	Planning and managing the harvest	
Duration	2 weeks	
Date(s)	End of august - Mid of September	
Number of students	10 foreign students	
Selection of students	Minimal skills in languages and basic knowledge in viticulture and oenology	*At least 18 years old students*
Involvement domestic students	10 domestic students, with the possibility of making pairs	
Dealing with language barrier	English, French, Italian language skills	*Not all languages are compulsory*

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L. outcome 1: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria* *Notes*	**Viticulture and Grape physiology** 1.1. List the incidences of the pedoclimatic and varietal factors on the grapes maturation process. (2 lessons-theoretical) 1.2. Analyze the effect of formol index in order to improve it with viticultural technics. (2 lessons-theoretical and practical laboratory) 1.3. Describe transformations of the grape during maturation as well as the composition at maturity. (3 lessons-theoretical) 1.4. Estimate the grape yield in a given plot . (4 lessons-practical in the vineyards) 1.5. Describe the implications of mechanical harvesting on vineyard's organization and cultivation. (3 lessons -theoretical) 1.6. Establish a plan of harvesting taking into account climate characteristics of the current vintage and the quality of the grape to be supplied. (2 lessons-theoretical)	
L. outcome 2: *Learning goal* *Learning methods* *Lessons (number)* *Assessment -*	**Analytical methods** 2.1. Monitor the grape maturation progress and suggest the probable schedule of harvest. (3 lessons-theoretical)	

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methods *Assessment - criteria* *Notes*	2.2. Carry out the principal methods of analytical controls necessary to evaluate the quality of the grapes. (4 lessons-practical vineyards and laboratory)	
L. outcome 3: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria* *Notes*	**Sensory evaluation of the grapes** 3.1. Compare different sensory evaluation methods of the grapes and apply the most suitable to the local conditions. (7 lessons-theoretical and practical laboratory)	
L. outcome 4: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - criteria*	**Economical analysis of the harvest** 4.1. List and describe the characteristics of the economic context for the principal local viticultural regions. (3 lessons-theoretical) 4.2. Compare the economic differences between mechanical and manual harvesting (4 lessons-theoretical)	

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Notes		
L. outcome 5: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - crite-ria* *Notes*	**Technology and management of the harvest** 5.1. Choose the most proper equipment in order to guarantee quality of the harvest. (3 lessons-theoretical) 5.2. Plan time and human resources of the harvesting in relation to wineries and market needs. (4 lessons-theoretical)	
L. outcome 6: *Learning goal* *Learning methods* *Lessons (number)* *Assessment - methods* *Assessment - crite-ria* *Notes*	**Technological and phytopatological aspects of the grape regarding vinifi-cation** 6.1. Identify potential threats to future wine health and quality, and propose remedies depending on the particular challenges identified (e.g. manual vs. mechanical harvesting, pests and diseases in the vineyard). (12 lessons-theoretical and practical vineyard and laboratory)	

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Grading	Theoretical tests and a small practical test (4 lessons)	
Personal tran-script	Certificate	
ECVET points	4 points	
Other (hosting possibili-ties)	Hosting in the families of domestic students	

Note ECVET points: *the total of a qualification (e.g. skilled worker for viticulture and oenolgy on EQF level 4) totals 240 points, that is a maximum of 60 points for a year of full-time VET*.

Note Personal transcript: *written documentation for the learner including the learning outcomes, the grading and the ECVET points.*

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Learning worksheet

1. Explain the problems caused by unhealthy grapes on the must and on the wine.
2. Learning how to distinguish different diseases with similar symptoms (e.g.: Grey mould, Sour rot, Esca disease, bunch dryness due to nutritional problems) by means of pictures and analysis of the given samples.
3. Evaluation of the disease severity in a given vineyard counting a sample of at least one hundred bunches randomly collected.
4. Take the decision to make a normal harvest or a selection of the grapes in the vineyard or at the cellar by means of a given sheet of evaluation.
5. Treatment of the must: SO_2, heating, fining agents, pectolitic enzymes, glucanases enzymes. Explanation of the main and side effects of each treatment. Calculate timing and amount of the treatments.
6. Must and wine tasting with faults related to these issues.

Example of evaluation sheet

1. Identify the symptoms on a group of pictures and/or a given sample.
2. Calculate the disease severity related to a given plot.
3. Determine the amount of SO_2that has to be added in a given quantity of must in relation with the disease severity.
4. Triangular tests for wine faults.

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