

WINESITY - Automatic sensor for continuous density monitoring in wine fermentation

Summary

The WINESITY project general objective is the design and production of a prototype of automatic densimeter to continuously control the evolution of the fermentation in wine tanks used in the wineries for this purpose.

Benefits associated with the use of the WINESITY sensor are:

Reducing time spent by technicians in the measurement of the density during fermentation.

At present, the density is controlled manually, by means of a laborious procedure that is carried out once or twice daily in all fermentation tanks. This requires a daily time of a technician which in a cellar of the Cooperativa de Falset Marçà and Afalma size is estimated in approximately 2 hours.

Detect more rapidly problems that may arise during fermentation:

Continuous control of density in the tanks represents a preventive measure against problems related to the wine quality derived from disturbances in the fermentation process. WINESITY sensor allows quick reaction in cases of stuck fermentation, to prevent the growth of lactic and acetic bacteria that may affect the organoleptic quality of the wine.

Optimize the use of fermentation tanks

The continuous control of density allows immediate detection of fermentation problems that can slow it down and, consequently, lengthen the time it's necessary to keep the wine in the tank to complete the process. Based on the experience of the Agricultural Cooperative Falset Marçà and Afalma, this rapid detection could save up to 3 days of tank occupation, allowing the entry of more grape in the cellar, and an increase in the production of wine per campaign.

Objectives

WINESITY Operational Group was created, led by the AGRICOLA FALSET MARÇA I S.C. AFALMA SCCL, together with the following members:

-Innovation and Industrial and Sustainable Research, S.L. (IRIS), technological company

-Wine Technological Park Foundation (VITEC)

-Federation of Agricultural Cooperatives of Catalonia (FCAC)

-ARLALORA, S.L., environmental consultancy

All of them have signed a Collaboration Agreement to develop the WINESITY project, which includes the construction of some prototypes of the sensor, and piloting its operation at the facilities of the Cooperativa Agrícola Falset Marçà i Afalma .

The design details of the sensor, the way it is planned to carry out this piloting, the functions of each member and the proposed timeline are included in an explanatory memorandum. Drafting of this report was another of the objectives of this first phase of the project, and it will be the basis for the construction of the devices and the design of the pilot methodology in the second phase.

Conclusions

When installing the automatic WINESITY sensor in the fermentation tanks of the winery, the following improvements in the winemaking process management are expected:

As a first contribution, the sensor will greatly reduce the time spent by specialized personnel on the control of density, by changing from a manual to an automatic system. This will release the winemaker of

a job that must be done at a time of maximum occupation in the cellar as it is the vintage period. Also, very important, it will allow any operator to carry out the control enabling the technicians to be available for other determining tasks to be carried out during vintage. Problems or irregularities in the fermentation process can be quickly detected, allowing to take measures on time, thus avoiding losses in production. It will also allow faster release of fermentation deposits, which will reduce or prevent the need for subcontracting other wineries to process the stock of grapes in excess (due to lack of space in tanks), and can lead to an increase in the production of wine, that can be up to 15%.

Operational Group Leader

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Tipologia d'entitat: **Cooperativa**

Keyword-category

Food quality / processing and nutrition

Territorial scope

Province

Tarragona

County

Priorat

Project dissemination *(publications, seminars, multimedia...)*

Nota informativa destacada a la pàgina web de la Federació de Cooperatives Agràries de Catalunya (FCAC), informant de la finalització de la primera fase del projecte Winesity

Project website

<http://www.cooperativesagraries.cat/>

Other project information

Project period

Starting date (month-year): Març 2017
End date (month-year): Setembre 2017
Project status: *Finalised*

Approved budget

Total budget:	28.571,00 €
<i>Funding source DARP:</i>	11.399,83 €
<i>Funding source EU:</i>	8.599,87 €
<i>Own funds:</i>	8.571,30 €

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Ordre ARP/96/2016, de 27 d'abril, per la qual s'aproven les bases reguladores dels ajuts a la cooperació per a la innovació a través del foment de la creació de grups operatius de l'Associació Europea per a la Innovació en matèria de productivitat i sostenibilitat agrícoles i la realització de projectes pilot innovadors per part d'aquests grups (operació 16.01.01), i es convoquen els corresponents a 2016.

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