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## A new tank for the production of high quality wines without using any chemical additives

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Phenolic compounds play a key role in the quality and health benefits of a wine so that, in the last twenty years, many devices have been created to assist the winemaker in obtaining products characterized by a good structure and color intensity and strongly linked to its territory of origin. In this experimental work a versatile innovative tank was set up to allow the automation of the processes of fermentation, maturation and storage of wines, including the mixing and retention of suspended solids (maturation on lees). The work has been carried out according to the following steps:

- **First phase:** red winemaking, in Vine and Wine research center of DAFE, by utilizing both a first prototype of small volume (V=5 hL) and a traditional tank having the same geometrical characteristics.
- Second phase: having made the necessary improvements, an innovative tank (Patent number PT2009A000018) of greater volume (V=50 hL) was used in winemaking in a famous Tuscan farm, comparing its operating effectiveness with a traditional tank having the same volume and maintained at the same temperature;
- Third phase: Which is ongoing, white wine making process was carried out without using any chemical additives with special reference to sulfur dioxide or sulphites. The preliminary results of this experimentation, seem to underline how the new tank is able to produce high quality white wines which contain low level of chemical additives which can provoke adverse reactions (ex: skin rashes and irritations) in sensitive people.

## **Biography**

Zinnai Angela completed his PhD at the age of 25 years from the Scuola Superiore Sant'Anna, Pisa. She is an Associate Professor of Food Technology at Pisa University. In 2008, she received a "Special Mention" at "Montana Premium" for Food Science Research (with her colleague Venturi F). She published more than 80 papers in journals or volumes and serving as a referee for research projects and papers. She was a scientific author for an original patent (PT2009A000018) that received a "Special mention of the Jury" at 24° SIMEI. She was a Chair at Bioprocess 2013 conference (Kansas City, USA) conducted by OMICS Group.

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