

Rome, 11th December, 2013

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Presence of Copper Chlorophyll compounds in Olive Oils and Grape seed oil - Preface

Since few weeks several Italian producers and exporters of edible oils are facing problems to distribute their products in Taiwan due to notification by Taiwan FDA of a suspect use of artificial colouring substances.

This notification is based on the detected presence of Copper Chlorophyll in Pomace Olive Oil, Grapeseed Oil and Extra Virgin Olive Oil

Some Italian and foreign companies have requested CHEMISERVICE laboratory to test their oils exported to Taiwan, in order to verify the presence of Copper Chlorophyll.

The tests result has been negative.

The methodology used by CHEMISERVICE is attached here (Attached N.1), as excerpt of a Spanish paper by the researchers of Grasa Institute of Sevilla.

In order to understand the reason of the different results between Italian Laboratory and Taiwanese ones, the two methods have been compared and they came out to be similar, with one important difference: Taiwanese laboratories begin the testing procedure with a bigger sample, 1 gram Vs. 0,3 gram and inject into HPLC/DAD 40 micro liters, which is the double of the quantity used by Chemiservice, and eight times–bigger than the quantity used by Milan Oils & Fats Laboratory acknowledged by Italian Agriculture Ministry.

The consequence of this difference in the methodology is that in some cases a small peak at 650 nM, characteristic wavelength of copper chlorophyll, appears in Taiwanese test graphs, but does not appear in Italian ones.

This small peak, potentially indicating a minimal presence of Copper Chlorophyll, has been interpreted by TFDA as a proof of artificial sophistication of the oils by addition of colouring substance, but our analysis on some sure genuine oils, both crude and refined, is showing that this small peak can be already present in crude Olive Oils and Grapeseed Oil, before refining process, and it is impossible to eliminate it completely during refining.

On the other hand, it is also possible, during the refining process, the generation of modified Chlorophyll, or Copper Pyropheophytine with a related splitting of Chlorophyll peak, with consequent appearance of a second peak at 650 nM (as per Professor Amelotti research, here attached as Attachment N.2)

Copper presence in crude olive Oils and Grapeseed Oil is easily explained by fungicides treatments with copper sulphate, while the refining conditions justify the shifting of Magnesium ions by Copper ions in the Chlorophyll complexes (or Pyropheophytines).

The conclusion is that a small peak at 650 nM could be related to a minimal presence of Copper Chlorophyll generated naturally and much much smaller than quantity requested to colour the oil.

With the aim of identifying the artificial addition of colouring substances in edible oils we believe it is also important to consider the total value of the copper presence in the tested samples. According to our experience edible oils artificially coloured and with a high content of Copper Pyropheophytines show values of Copper much higher than the limit allowed by Taiwanese Standards (0,4 mg/kg).

On the other side we would like to bring to your attention that from a mere economic stand point, it would not make sense to spend money adding artificial colour after spending money to take it out with refining.

Based on above considerations, Assitol kindly asks you to deal with TFDA in order to suspend any measure against import and distribution of Italian oils until the situation will be clear for Taiwan authorities

Please consider ourselves available for any further explanation you or TFDA may need.

Trusting in your support.

Best regards

IL DIRETTORE GENERALE
(Claudio Ranzani)

