

TRAPPING CORRECTORS

Traps the unwanted heavy metals that can form in wines.

Innovative formula which reduces the levels of iron and other heavy metals in wines. 100% natural, biodegradable and non-allergenic, Qi TRAPPING is free from animal products and synthetic substances.

OENOLOGICAL APPLICATIONS

Throughout the whole winemaking process, and even after bottling, there are numerous contaminants which can alter the stability and quality of wines. This is why levels of iron, copper, lead and other metals need to be monitored and kept under control.

Potassium ferrocyanide and calcium phytate form part of the range of treatments currently used to significantly reduce the mineral-based contaminants found in wines, but unfortunately such treatments are rather heavy-going.

Chitin derivatives are the most active biomolecules when it comes to complexing certain metals, with the result that they can display strong interaction with certain metal salts derived from copper, iron and aluminium.

The main interest in these polymers is the fact that they are not synthetic or derived from animal sources, are non-allergenic and biodegradable. After they were authorized for use in winemaking in 2009, IOC set about studying these molecules' capacity to chelate metals in a "wine" matrix.

Qi TRAPPING is the result of those studies. Its formula based on chitin derivatives has been specially designed to encourage trapping while at the same time respecting the organoleptic characteristics of the wine.

INSTRUCTIONS FOR USE

Sprinkle 1kg of **Qi TRAPPING** onto a quantity of water 5-10 times greater volume and mix until a homogeneous suspension has been obtained.

Add this suspension to the wine and make sure it spreads evenly through it. For a complete treatment, we strongly recommend leaving the product in this suspension for 3-5 days. The contact between **Qi TRAPPING** and the wine, along with the duration of the treatment, are the main conditions allowing unwanted elements to be significantly reduced.

The trapping of metals by the chitin derivatives is dependent on the characteristics of the wine (in particular its pH and ionic strength).

Before carrying out any treatments, we recommend performing trials on samples.

DOSE RATE

- In wine: from 20-100 g/hL

PACKAGING AND STORAGE

- 1 kg

Store in an airtight container in a dry, odourless place away from direct sources of light, at a temperature of between 5-25°C.

Qi TRAPPING

The natural "magnet" that combats metals

CONTEXT AND RESULTS OF EXPERIMENTS

The ability of chitin derivatives to trap metals has been well documented in the relevant literature and a number of treatment mechanisms have been suggested on the basis of this, such as chelation through electrostatic interaction.

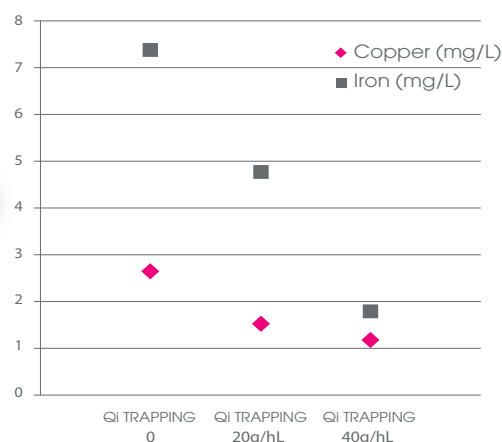
IOC has made a particular study of the effect of chitin derivatives on heavy metals in the conditions found in winemaking processes. The concentration, dependence and matrix effects (alcohol levels, pH, etc.) have been subjected to numerous tests.

Iron and copper

Iron and copper are the two main catalysts in wine oxidation processes. These two elements can also be behind instances of turbidity followed by unwanted precipitation.

European regulations set the maximum permitted amount of copper in wine at 1mg/l. As far as iron is concerned, it is strongly recommended to keep it below 10mg/l in order to avoid running any of the risks associated with iron.

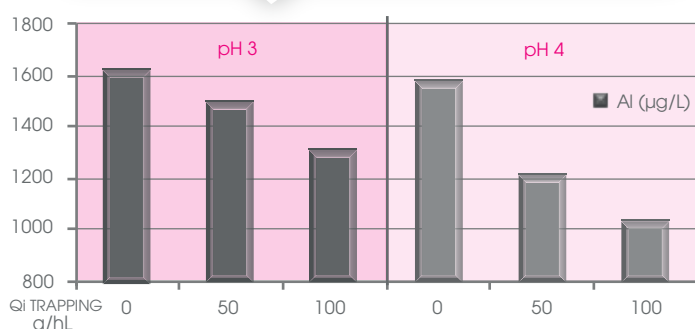
The experiment presented on the facing page describes the effect of chitin derivatives on the elements iron and copper. The experiment was conducted on a white wine contaminated with these wines. The treatment was performed for three days. The results show that **Qi TRAPPING** had a significant effect on the iron, and to a lesser degree on the copper.



Aluminium

This element is not considered toxic, but as a guideline we remind you that in the water used for beverage production, the WHO recommends keeping aluminium levels below 0.2mg/L.

IOC tested the impact of chitin derivatives on the aluminium in a wine whose pH was deliberately modified. The interaction with **Qi TRAPPING** took place over the course of a single day and consisted of three re-applications. Thanks to this product, a notable reduction in aluminium levels could be seen. It was also observed that the pH has a very important effect (it is acknowledged that the higher the protonation of biopolymers, the less effective the chelation is).



Lead

This element has no known beneficial biological effects and has been noted both for its ability to accumulate in the human body and its chronic toxicity. The effect of chitin derivatives in aqueous environments is well known, but their effects on wines have yet to be adequately described. This is why we thought testing **Qi TRAPPING** on lead would be a useful study.

The experiment was performed under similar conditions to the previous case. Using moderate dosages and a short treatment time, a particularly significant reduction in lead levels was observed in wines with a high pH.

