vinetur

OIV approves pulsed electric fields to stabilize grape musts and wines

The move was part of 16 resolutions adopted in China that updated global wine standards on fermentation, testing and biodiversity

Saturday, November 14, 2026



The OIV approved 16 resolutions on October 16 at its 24th General Assembly in Yinchuan, Ningxia, updating international rules for viticulture, winemaking and analytical methods, and adding pulsed electric fields to the body’s recognized practices

for stabilizing grape musts and wines.

The decisions were adopted during the 47th World Congress of Vine and Wine, held in China from October 12 to October 16, where more than 600 participants from 47 countries attended, including representatives from 42 OIV member states and five nonmember countries. The meeting included 420 scientific contributions and six technical visits. The presentations are expected to be released in open access in the coming months through the IVES Conference platform.

Among the most notable changes are two resolutions that recognize pulsed electric fields, or PEF, as microbiological stabilization treatments for must and wine. The technology works by causing irreversible electroporation in microbial cell membranes, which inactivates spoilage organisms. In must, the treatment is intended to remove or reduce unwanted microorganisms and to stop alcoholic fermentation immediately when producers want to make wines with residual sugar, while using lower doses of sulfur dioxide. In wine, the stated aims are to remove or reduce spoilage microorganisms, delay the start of malolactic fermentation without sulfur dioxide, or block that fermentation.

For the drinks industry, especially producers and laboratories working with wine, grape juice and wine vinegar, the changes could become an important technical reference for microbial control, product stability and origin testing. OIV standards are often used by regulators, exporters and wineries as benchmarks, so updates of this kind can eventually affect production decisions, compliance work and trade discussions.

The assembly also adopted a resolution on conserving grapevine genetic diversity. That text sets out strategies to preserve intravarietal variability in old vineyards, where long-accumulated genetic diversity is at risk of being lost. The measure links that conservation work to climate adaptation and future selection programs. It calls for surveys of old vineyards and for plant material to be preserved both in situ and ex situ. Before preservation, the varietal identity must be confirmed and the material must be tested to ensure it is free of viruses. The resolution says rare varieties should be given priority.

Several resolutions updated the International Code of Oenological Practices. One authorizes the use of dimethylpolysiloxane, or PDMS, as an antifoaming agent during alcoholic fermentation, with a maximum dose of 10 mg/l. The treatment is not allowed in wines intended for sparkling wine production. Another adds functionalized mesoporous silica for treating musts to selectively adsorb and remove unstable proteins. That product is classified as a processing aid and must be added discontinuously to the tank, with the dose set through preliminary trials within a range of 20 to 200 g/hl. Wine produced after that treatment must be filtered to a porosity of 0.45 µm or less.

The OIV also expanded the permitted uses of yeast mannoproteins. Under the updated rule, they may be used to improve stability against potassium bitartrate precipitation, strengthen protein stability in white and rosé wines, and improve color stability in red wines. The maximum dose is 400 mg/l.

Two more resolutions cover new treatments for white musts and white wines using styrene-divinylbenzene adsorbent beads. In both cases, the liquid passes through a column of beads at a controlled flow rate. The goal is to reduce browning risk by partially removing polyphenolic compounds, especially hydroxycinnamic acids and oxidized polyphenols. Before treatment, the must or wine must be clarified to a turbidity of 10 NTU or lower.

Another update broadens the range of products that can be used as activators for malolactic fermentation by adding powdered cellulose to materials that already included microcrystalline cellulose and yeast-derived products.

The International Oenological Codex was revised as well. A new monograph sets specifications for chelating styrene-divinylbenzene resins with an iminodiacetic functional group, intended to reduce metal content in aged wine vinegars. The monograph sets purity and safety requirements, including no detectable migration of styrene, divinylbenzene or iminodiacetic acid into a vinegar simulant, and it limits the resins to five regenerations. Another resolution updates the monograph for citric acid, used to acidify wines or limit the risk of iron haze, to include both monohydrate and anhydrous forms under INS 330.

The analytical changes are likely to draw attention from testing laboratories and producers focused on traceability. One resolution adds an enzymatic method for measuring ethanol in grape juice, reconstituted grape juice, concentrated grape juice and grape nectar at low levels, from 0.150% to 3.00% alcohol by volume. Another establishes a method for determining the strontium isotope ratio in wine, a marker linked to geological origin. The procedure uses high-pressure microwave digestion, chromatographic separation of strontium and rubidium, and measurement by quadrupole inductively coupled plasma mass spectrometry, or Q-ICP-MS. That kind of origin-related analysis may gain importance as producers and regulators look for stronger tools to verify provenance claims.

The OIV also set a maximum allowable level for sorbic acid in finished wines at 200 mg/l. For Vitis labrusca and its hybrids, the ceiling is 250 mg/l.

On the regulatory side, the body continued its effort to remove outdated texts from its legal framework. A resolution in the economics and law area withdraws 43 resolutions considered obsolete, outdated or redundant. The OIV said that move is meant to improve the coherence of its rules and make them easier for member states to apply under the 2025-2029 strategic plan. The organization’s corpus includes 1,445 resolutions adopted between 1928 and 2025. It had already withdrawn 376 resolutions in 2023 and another 184 in 2024.

In the safety and health area, the OIV updated the classification of oenological tannins depending on how they are used. When tannins are applied to must, they are treated as processing aids because they do not perform a technological function in the finished wine. When they are used in wine for other purposes, they are classified as additives.

Taken together, the October 16 decisions expand the OIV’s recognized toolkit for managing foam, unstable proteins, browning, microbial spoilage and fermentation control, while also sharpening laboratory methods and cleaning up older rules. For wineries and related beverage businesses that rely on international technical standards, the most immediate interest is likely to center on pulsed electric fields, the revised stabilization options and the new analytical methods tied to alcohol measurement and geographic origin.