# RESOLUTION OIV-VITI 705-2022

# OIV RECOMMENDATIONS ON ALTERNATIVES TO HERBICIDES USE IN VINEYARDS

THE GENERAL ASSEMBLY

ON THE PROPOSAL of Commission I Viticulture and the group of experts "Vine Protection and Viticultural Techniques",

IN VIEW OF the Article 2, paragraph 2 b) i and c) iii of the Agreement of 3rd April 2001 establishing the International Organisation of Vine and Wine, and under points 1.a.iii, 1.b.1, 1.b.4, 1.b.6, 1.b.7, 1.c.iii, and 1.f. of the OIV Strategic Plan 2020-2024 which relates the promotion of environmentally friendly vitiviniculture, and the consideration and responses to the challenge of climate change, and the improvement of environmental performance.

CONSIDERING Resolution CST 1-2004 on Development of sustainable vitiviniculture

CONSIDERING Resolution OIV-VITI 333-2010 establishing the concept of terroir,

CONSIDERING the OIV resolution OIV-VITI 592-2018 OIV good practices for minimizing the impacts associated with the application of plant protection products in vineyards,

CONSIDERING the OIV resolution OIV-VITI 569-2018 OIV protocol for the sustainable use of water in viticulture, in particular for the point concerning "Water consumption in the vineyard",

CONSIDERING the OIV resolution OIV CST-518-2016 on general principles of sustainable vitiviniculture, and especially the principle 2: Sustainable vitiviniculture respects the environment and the parts concerning to preserve the biodiversity,

CONSIDERING the OIV resolution OIV-VITI 641-2020 guide for the implementation of principles of sustainable vitiviniculture,

CONSIDERING the adoption of the Strategic Plan for Biodiversity 2011-2020 under the Convention on Biological Diversity (CBD; 2010) and the 2030 Agenda for Sustainable Development of the United Nations committed the international community to a set of ambitious goals on 'living in harmony with nature' and 'leaving no one behind, which requires immediate and ambitious action to protect life both below water and on land, by reducing pressures on biodiversity and ecosystems.

CONSIDERING the strengthening at the international level of public policies and societal expectations on the protection of biodiversity and natural resources (in



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particular water and soil resources)

CONSIDERING the growing demand for agricultural and food products (products from organic farming, integrated production or other system aimed at meeting sustainability objectives) resulting from production methods that minimize the use of inputs

CONSIDERING the innovative technics, agricultural equipment and technical means, that allow alternative interventions that facilitate the reduction or replacement of the use of herbicides,

CONSIDERING the increasing professionalization of winegrowers facilitating the transition to new cultivation practices, with innovative tools, allowing the use of less inputs,

CONSIDERING the progress of scientific knowledge and the numerous experimental results relating to the maintenance of vineyard soils without the use of herbicides,

CONSIDERING the potential for increasing the carbon storage in grapevine soils through the development of adequately selected and managed cover crops and inherent organic matter, aware of its beneficial effect on soil health and as potential carbon sink in the face of climate change

CONSIDERING the political and socio-economic importance of the OIV's approach to sustainability for national and regional legislators, scientific institutions, professional organisations and the winegrowers themselves,

## RECOGNIZES:

- Various chemical formulations and substances with herbicidal qction are allowed for use in viticulture.
- The use of herbicides of synthesis may have negative effects on the environment as they can impact the biological activity of the soil through persistence in the soil and percolation in the deep soil and contaminating soil surface or groundwater resources in a persistent manner.
- However, given the current state of knowledge and available alternative methods, herbicides are still indispensable for soil maintenance in vineyards in certain specific situations (where mechanisation is not possible or is very difficult or the less sustainable option).
- The alternative to the elimination of spontaneous vegetation by active substances is based on the implementation of the following  current methods, operated alone



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or in combination:

i) elimination of spontaneous vegetation by mechanical (or physical) means without deep plowing,

ii) establishment and adequate maintenance of a plant cover (spontaneous vegetation, seeded or selectively planted)

iii) application of compostable materials to soil to avoid or limit the growth of spontaneous and competing herbaceous vegetation.

iv) se of bio-based substances with herbicidal effect (bio-herbicides)

- Strategies based on the combination of one or more of these agronomical methods with the application of herbicidal substances are quite common in many vineyards.
- The choice to reduce and/or abandon the use of herbicides implies significant systemic changes for the grape growers, and the transition to other practices for the maintenance of the floor surface requires specific hardware equipment, longer and more frequent intervention times and an adapted qualification of the operators.
- Despite significant constraints, the reduction and total elimination of the use of herbicides for maintaining vineyard soils must be encouraged in all situations where this is technically feasible with available means. However, it is important to ensure that the transition to these new methods does not undermine the economic balance of farms.
- In some cases, this change of viticultural practices may also result in undesirable increase in greenhouse gas emissions or soil erosion, which should be weighed against the procured benefits. In addition, in situations of sloping or terraced vineyards, available soil maintenance techniques without herbicides may prove to be unsuitable because they are economically unsustainable.
- Additionally, under wet conditions mechanical weed control of the grapevine row (inter-row operations) might not be efficient and must be repeated several times during the year, leading to detrimental consequences (higher fuel consumption, increased soil compaction).
- Application of compostable materials might lead to sanitary problems like root rots, nutritional disorders, etc.



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- The techniques and devices available for mechanical maintenance of the soil surface are many and varied, and new tools are appearing regularly on the market. In the case of mechanical and physical interventions, it is advisable to research and choose, for each pedoclimatic situation and type of vineyard, the techniques or combinations of techniques that are best suited.
- The strategy based on controlled soil cover with spontaneous (where is no alternative) or seeded herbaceous vegetation has multiple advantages. Nevertheless, it requires very good technical mastery and adaptability to the constraints of the plot management. It is applied temporarily or permanently, depending on the case, and concerns the entire surface of the vineyard or only a part of it (e.g. the strip between the grapevine rows).
- The implementation of controlled soil cover strategy is very dependent on pedoclimatic water balance and impacts the vigour of lower vine and its production. However, when competition for water between grapevine and cover crop is balanced and greening is carried out in an appropriate situation, the plant cover of the soil is effective in controlling erosion, improving the bearing capacity for machines, limit compaction and sequestering carbon in the soil by increasing its richness in organic matter.

## Recomends to member states

- To initiate or develop actions to study the feasibility of the transition towards alternative practices to weed control in the vineyard under regional conditions.
- To initiate research focusing on alternative practices to the chemical weed control in viticulture, under regional conditions with regard to adequate sustainability indicators (energy consumption, toxicity risk, soil compaction, effect on production).
- To develop technical training (particularly in the proper use of the innovative and adapted tools, and on the knowledge and management of spontaneous (where is possible) and seeded vegetation), and actions with the aim of educating, communicating and raising awareness on this topic.
- To develop and encourage research and experiments to study the feasibility and impacts of soil surface management without herbicides, by getting producers involved (participatory networks), in particular about erosion and the sustainable



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use of water.

- To promote innovations for soil maintenance via different methods (physical or others).In particular, research into innovative mechanical tools for working the soil correctly on the grapevine row should be encouraged in order to limit damage to the vine (injuries) and at the same time reduce work times, including in vineyards with high planting density, when possible used unmanned ground vehicles to weed physical control.
- To encourage the international exchange of the results of experiments and feedback on experiences of soil maintenance without weed control.
- To support alternative products and/or viticultural practices to promote the sector's sustainability objectives, especially those in direct relation to sustainable soil management (balanced water budget, low toxicity risks, carbon emission and long-term sequestration and organic matter in soils, microbial biodiversity, soil health, etc.).



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