

Final International Symposium

Toulouse, 2016 November 16 & 17th

Hotel de region

22 Bd du Maréchal Juin



GRUPPO ITALIANO VINI

PROSPECTIVE ON INNOVATION TOWARDS SUSTAINABILITY

Marco Viciani
Agronomist

GRUPPO ITALIANO VINI

Who we are

Gruppo Italiano Vini is the first Italian winery and among the first companies in the world in the production and marketing of quality wines.

The Group owns 15 historic wine cellars and vineyards owned (1,340 ha) located in the most prestigious wine areas of Italy.

Each Group cellar follows the various stages of the production chain:

- cultivation of vineyards
- Harvest
- winemaking
- refining and bottling

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Our mission is to leverage the Italian wine production operating in all stages of the production chain.

The Group has committed to an production philosophy on the concept of "**ethical supply chain**", which is the guarantor of quality processes in all steps of the supply chain:

- care for vineyards
- attention in the cellar
- efficiency of the service

All this guarantees the consumer quality products and

SUPPLY CHAIN SUSTAINABILITY

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Our idea of **INTEGRATED VITICULTURE**:

- Maximum respect for the consumer
- Special attention to environmental protection

**Viticulture as a resource for the environment and
the environment as a resource for agriculture**

SUSTAINABLE VITICULTURE

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Plant protection products:

- **Direct harmfulness** - influence the farmers working in the vineyard in contact with plants sprayed
- **Indirect harmfulness** - affects the ultimate consumer of wine. In fact, the active substances which are normally used for pest can leave traces in wines

Increased care in the selection and use pesticides:

- more healthy work environment
- complete absence of residue in the product
- greater respect and protection of the consumer

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Do not use products classified as: very toxic (T +), toxic (T) and harmful (Xn)

CLP:



Restrict the use of products classified as: irritants (Xi)

CLP:



Prefer to use products classified as: unclassified (NC)

CLP:



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- **Do not use** synthetic insecticides broad spectrum of action (eg. Clorpyrifos) as affect populations of beneficial insects such as bees or natural antagonists
- **Decrease the use** of belonging to the group of CAA organic fungicides (eg. Dimetomorph, mandipropamid) and synthetic fungicides as these groups of molecules tend to left residues in grapes (must) in direct proportion to the time of use
- **Prefer to use** products also allowed in organic farming
- **Limit the number of treatments (3 maximum)** with the same active principle so as not to induce the resistance of the pathogen

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The most important steps in a sustainable line of defense are:

- *Timing of intervention*
- *Active ingredient chosen to use*

The decision-making process, when they have a limited number of active principles, must therefore assess with caution:

- Weather patterns
- Actual pressure of the pathogen

Therefore necessary to constantly monitor the condition of intervention by:

- constant updates on weather
- regular phytosanitary inspections

SUSTAINABLE VITICULTURE

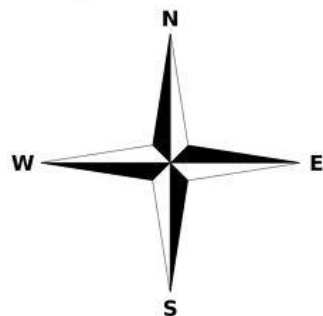
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The use of a product rather than the other should be well thought out, always paying most attention to the following aspects:

- Correct choice of the active principles
- Timing of use
- Maximum number of treatments per season
- Correct dosage of the product
- Correct use of sprayers
- Proper distribution of the chemical mixture

OUR FARMS IN TUSCANY

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FATTORIA GAGGIANO



DOCG
Chianti Classico

FATTORIA MACHIAVELLI

FATTORIA SELVANELLA

FATTORIA TERRAROSSA

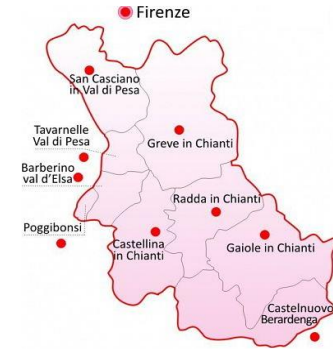
- **605 ettari di proprietà in Toscana**
- **163 ettari di vigneto**
- **47 ettari uliveto**

TUSCAN VITICULTURE

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DOCG CHIANTI CLASSICO



- Territory already outlined in 1716 by an edict of the Grand Duke of Tuscany, Cosimo III
- Hills between Florence and Siena, 9 municipalities
- 600 producers - 7.000 hectares - 280,000 hectoliters
- 80% Sangiovese - 20% complementary grapes
- Yield Specification: 75 q.li/Ha
- Limited land but very rich in features

TUSCAN VITICULTURE

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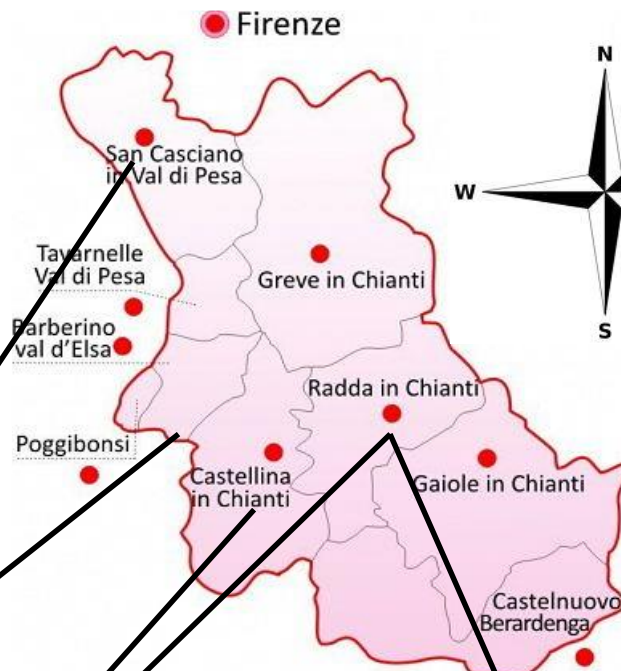
Soils of origin, nature and effects on the vegetative-productive behavior completely different from each other regardless of the variety and rootstock

Soil fraction as crucial to the quality of wines

The diversity of soils which originates different wines is our wealth

TUSCAN VITICULTURE

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ARGILLA



TUFO – ARENARIE



ALBERESE



GALESTRO

TUSCAN VITICULTURE

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The distinctive characteristics of our vineyards in Tuscany are related to diversity of soils.

The same clone of Sangiovese expresses great differences vegetative, productive and oenological depending on the type of soil where it is grown

Each macro-area united by these differences must be managed in a different way because it has different needs

Different agricultural management in function of each zone



ARGILLA

Gem fertility > 1

Production/plant > 3 kg



ALBERESE

Gem fertility = 1

Production/plant = 2-3 kg



GALESTRO – ARENARIE

Gem fertility < 1

Production/plant < 2 kg



ARGILLA

Grape weight = 450 gr

Berry weight = 2.44 gr

n° berry/grape = 184

Ø berry = 15.17 mm



ALBERESE

Grape weight = 322 gr

Berry weight = 2.16 gr

n° berry/grape = 157

Ø berry = 14.37 mm



GALESTRO – ARENARIE

Grape weight = 215gr

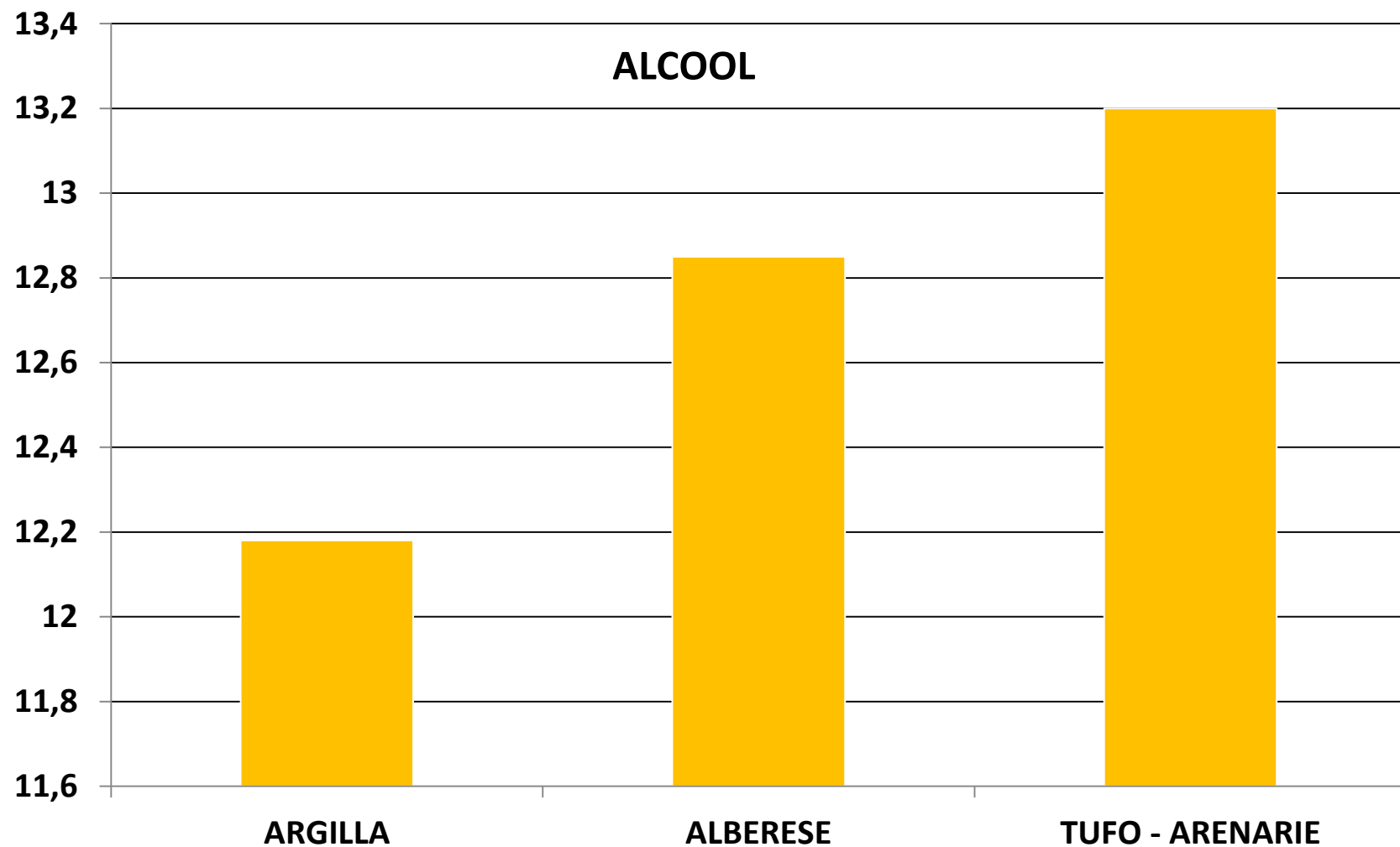
Berry weight = 1.97 gr

n° berry/grape = 109

Ø berry = 13.65 mm

TUSCAN VITICULURE

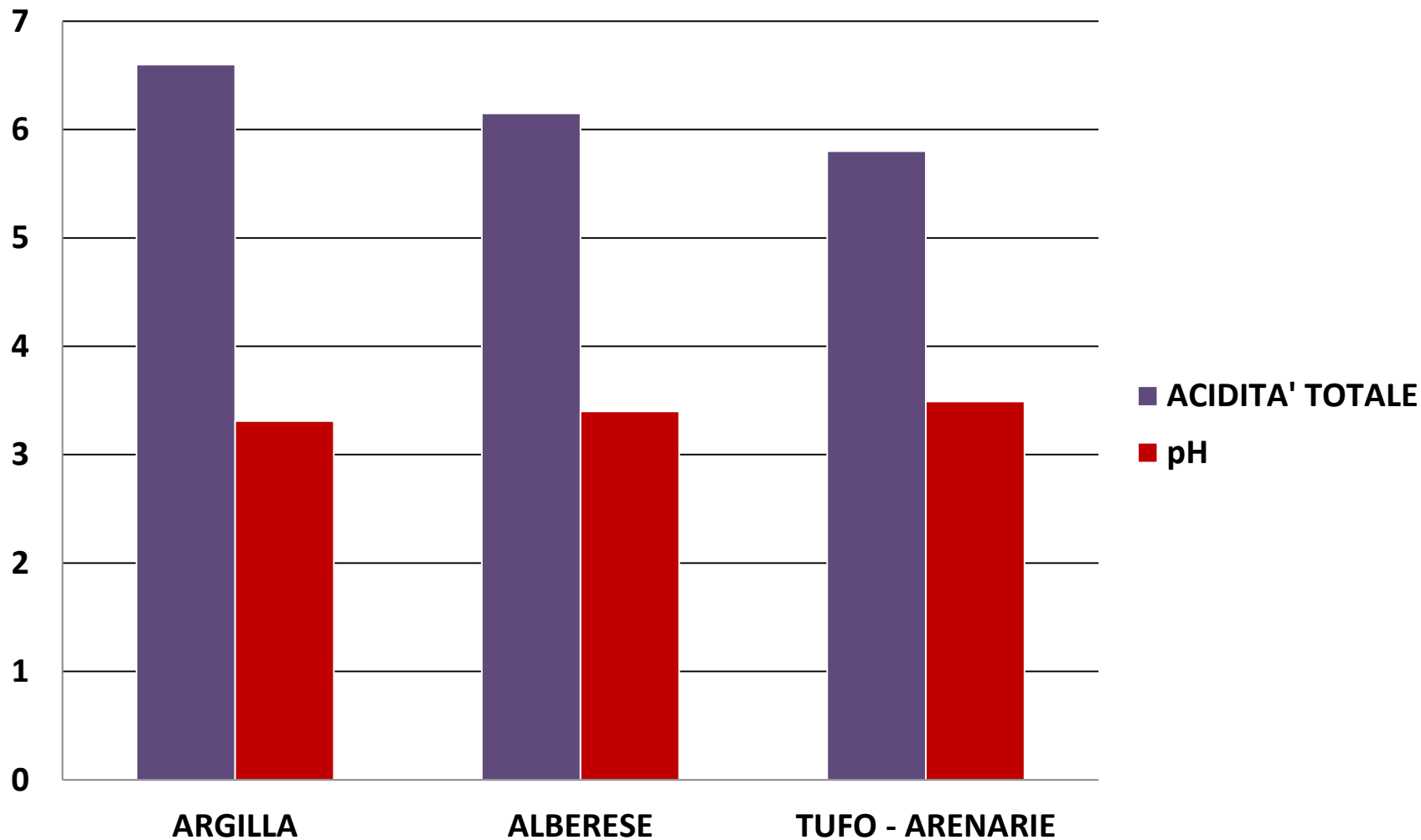
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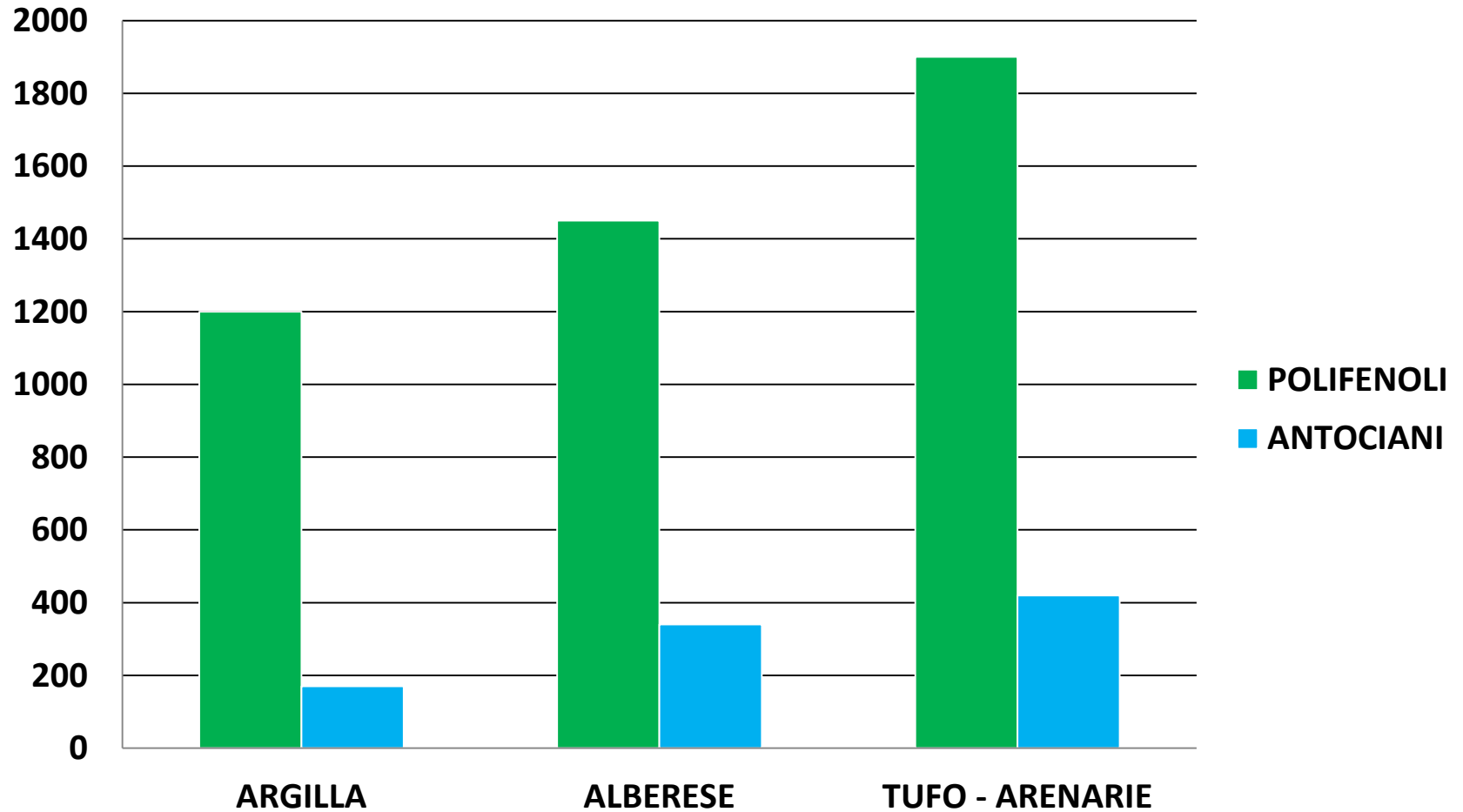
ACIDITA' TOTALE - pH



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POLIFENOLI - ANTOCIANI



SUSTAINABLE VITICULTURE

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We need to equip ourselves tools (DSS) that provide output useful to properly diversify the agronomic choices

In 2011 we were one of the first companies to have used in Tuscany the **vite.net** service

In 2011 we installed a network **of four weather stations**, distributed in every production site in the most representative vineyard, which send data to the web service assistance **vite.net**, which were created **four production units**

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Were entered into **the database vite.net** all necessary inputs to characterize the most of our 4 production units:

- *Planted Area*
- *Georeferencing*
- *Average altitude*
- *Generally facing*
- *Average slope*
- *Orientation of the rows*
- *Planting pattern*
- *Cultivation system*
- *Type of pruning*
- *Height, thickness and density of the foliage in the middle of vegetation*
- *Soil analysis*
- *Type of soil management*

Every 48-96 hours, the database is updated by entering updates of phenological observations and the presence of symptoms

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The **OUTPUT** providing vite.net are critical to decide IF, HOW and WHEN to take action against the main fungal pathogens:

- Peronospora (*Plasmopara viticola*)
- Oidio (*Uncinula necator*, *Oidium tuckeri*)

It also provides valuable information about the dynamics of generations of harmful insects, allowing, to place the best possible treatment:

- Tignola (*Loesia botrana*)
- Scafoideo (*Scaphoideus titanus*)
- Mealybugs (*Planococcus* spp.)

In particular, as a function of the measured weather parameters, weather forecasts the next 96 hours and phenological parameters provided, the system allows to know:

- The date of the probable infection of any pathogen
- Effectiveness of the previously performed treatment

SUSTAINABLE VITICULTURE

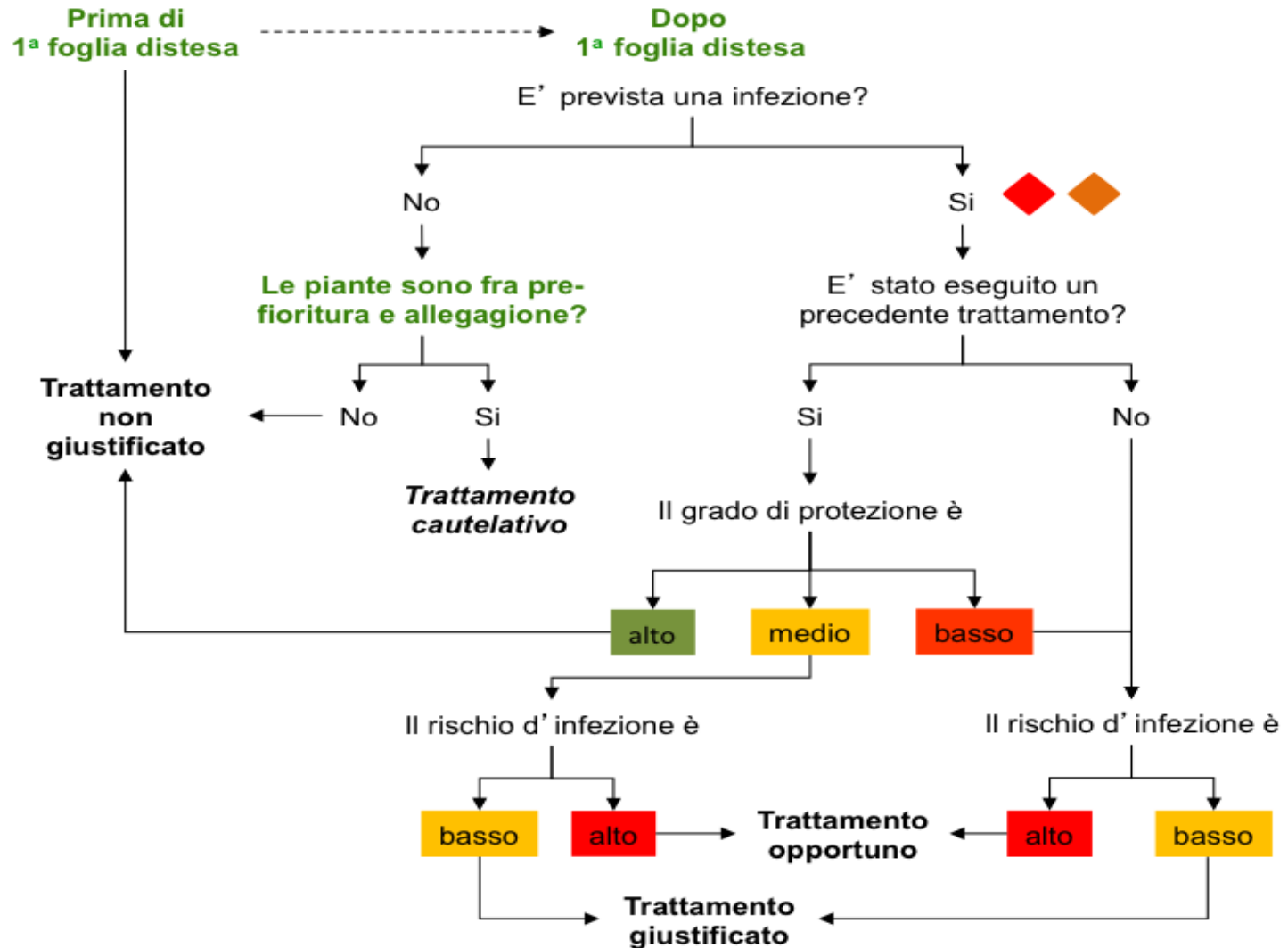
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Based on the supplied output it is possible to decide with risk awareness:

- **whether or not a treatment** (due to the real risk of infection and to any residual coverage of previous treatment)
- **with which product do**, according to the date of intervention (es .: preventive / curative, with more or less high resistance to leaching)
- **correct dose of product** to be used according to the phenological stage, and then to the amount of vegetation present at the moment

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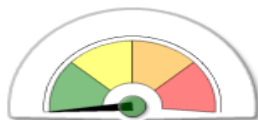
As a general principle, both the use of cover products as copper and sulfur and the use of products systemic, it requires a **preventive approach** and is therefore necessary to know when there are conditions that give risk of infection in order to:

- **Never work unnecessarily** if they are not the conditions for the infection
- **Always work preventative**
- **Never work in a curative way (if possible!)**
- **Decrease the label dose** while maintaining the same efficiency

SUSTAINABLE VITICULTURE

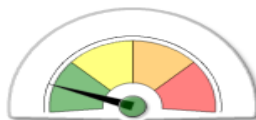
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GAGGIANO: malattie (indice di rischio sintetico)



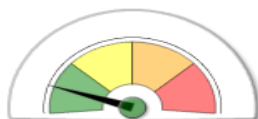
Peronospora Pr.

N. Infezioni: 21
Ultima: 13/06 Previsa: --/--



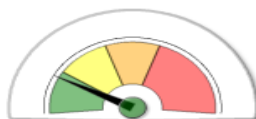
Peronospora Sec.

N. Infezioni: 25
Ultima: 14/06 Previsa: --/--



Oidio Ascospore

N. Infezioni: 9
Ultima: 04/05 Previsa: --/--



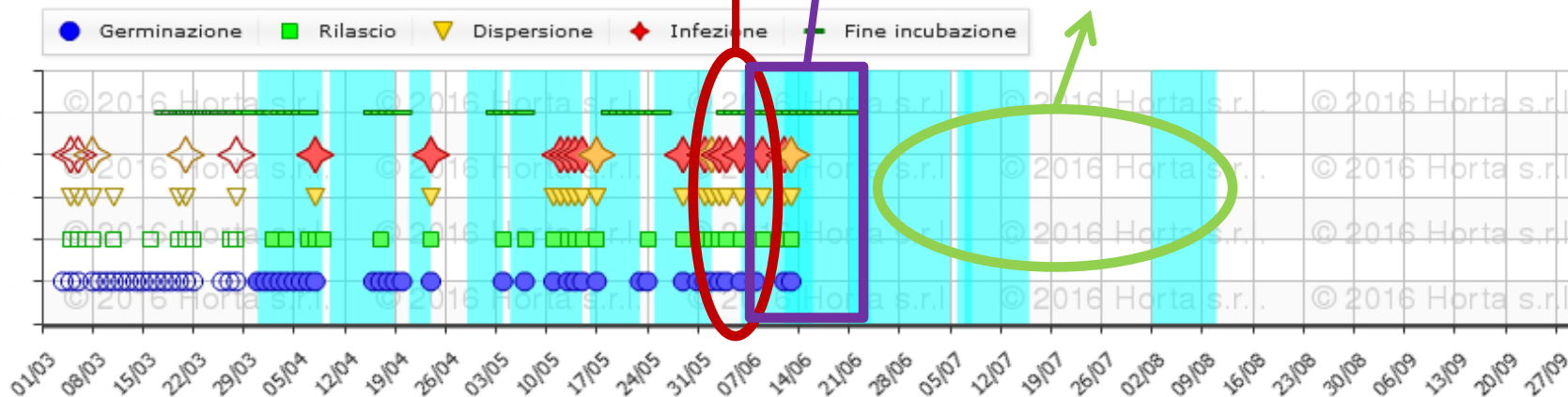
Oidio Conidi

**Impossible to spray because of rain!
4 infection events!**

Curative product!

**No Plasmopora risk but
sprayed copper to
increase the thickness of
berry skin**

Sintesi eventi



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Since 2011, for the management of the vineyards in Tuscany, we use the vite.net output as a support of phytoiatric decisions

Today we believe it is an indispensable tool for our idea of sustainability to the point that has been adopted for the management of the entire vineyard area owned by the Group bringing the Tuscan model in all other seals

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The importance of vite.net is the enhancement of our concept of SUSTAINABILITY as it allows:

- perform in a timely treatment only when there is a real risk of infection by decreasing appreciably product giveaway
- reduce the doses of active ingredient highly respecting the environment
- get feedback on holding of the active ingredient after treatment

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The savings on the cost of the treatments is evident if understood as a reduction of label doses

The cost savings seen as the number of treatments / year has not always materialized: depends on the number of infections and therefore season

However we believe it is essential for a company to know whether the money spent on treatment are actually served to the defense of the vineyard avoiding processing when there is no risk of infection or when the weather conditions advise against the application

We believe that in the long run this is more important than any immediate savings from the reduction of the dose and / or the number of treatments / year

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What we expect in the future:

- We believe that the resistant varieties are a great innovation, but we want to safeguard the native grapes and the wine typicality
- Models / systems that indicate the risk of onset of resistant strains
- New chemicals, safe for operators, consumers and environment
- Models / systems that allow a variable dosage of the active ingredients according to the actual amount of vegetation

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Toulouse November 17th 2016

GRAZIE A TUTTI PER L'ATTENZIONE

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