

Consorzio di Tutela



PROSECCO SUPERIORE
DAL 1876

TECHNICAL REPORT

DISTRICT OF CONEGLIANO VALDOBBIADENE
PROSECCO DOCG

BOLLE D'ANNATA 2020



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BOLLE D'ANNATA 2020

In collaboration with



BOLLE D'ANNATA
2020 TECHNICAL REPORT
edited by

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Not only does 2020 mark the sixth edition of Bolle D'Annata, but it also adds a new chapter to this historical collection of volumes, which have covered the progress of the viticultural campaigns in the Conegliano Valdobbiadene Prosecco Superiore DOCG Denomination since 2015.

From a climatic point of view, 2020 was characterized by a winter that registered temperatures in line with those of the period, followed by a sunny and dry spring, and then by a mild summer with widespread rainfall. The general trend of the vine's phenological phases was regular. However, due to the unstable summer weather conditions, the ripening phase could be described as "slow", although good on the whole; in fact, the temperature range that characterized the summer weeks resulted in good levels of acidity, essential for obtaining sparkling wines with the right notes in terms of freshness.

From a phytosanitary point of view, this year we wanted to feature and in-depth report on Flavescence dorée, more precisely in the chapter regarding the monitoring of insects, since the disease is transmitted by the leafhopper *Scaphoideus titanus*. There has been a significant resurgence of this phytopathy in the Denomination over the last two years (2019-2020).

This edition also includes chapters on the Viticultural Protocol and the S.Q.N.P.I. (National Integrated Production Quality System) Certification Project, in which as many as 117 companies – including wine farmers, winemakers and bottlers – participated this year.

We would like to thank Dr. Francesco Rech of the ARPAV Meteorological Service for his valuable contribution, from the first publication of this technical document, through to the drafting of the chapter regarding the vintage's meteorological trend.

We thank Dr. Elisa Angelini and Dr. Vally Forte of the CREA-VE of Conegliano for the precious contribution given over the years in the monitoring of insects and plant diseases, and for their collaboration in various projects.

We thank the Professors Carlo Duso (University of Padua) and Paolo Sivilotti (University of Udine), for the support given to us in the various years of activity.

We thank Giuliano Boni of Vinidea, for the support given in the berry tasting. The analysis that he carried out was important in helping the various technicians to fully understand the interaction between our production area's climate and its vines. Finally, a special thanks to all the winemakers who, thanks to their recommendations and suggestions, contribute to improving the work of the technicians year after year.

We wish all winegrowers a productive and profitable 2021 wine campaign, with the hope of a timely resolution to the global pandemic.

*Technical Area of the Consortium for the Protection
of Conegliano Valdobbiadene Prosecco DOCG*

The sixth edition of Bolle D’Annata brings 2020, without a doubt, a year that will be remembered throughout the world, to a close.

While in certain respects, nature may be a constant threat, it has never betrayed us here in the Unesco hills of Conegliano and Valdobbiadene. Indeed, its steady evolution has provided comfort in that it’s as if, despite everything we have been through, nothing has changed.

Since 2015, this volume has described the goings-on in the vineyards of the Conegliano Valdobbiadene Prosecco Superiore D.O.C.G. Denomination, in terms of climate, vegetation and treatments; these aspects are of course intrinsically linked. It is a publication that, apart from providing a summary of the year and testimony of the work carried out, adds to our knowledge of the Denomination, our vineyards and their management, which we hope is ever more effective.

Conegliano Valdobbiadene evokes the birthplace of a product that is synonymous with artisanal knowhow and the *Made in Italy* moniker. Here among the rows, a unique oenological phenomenon has come to be, resulting in a product that has remained true to its roots and sapience, yet which is able to speak all the languages of the world. Our values start from the roots of the vineyards – from the work and dedication that goes into caring for them every day, from the effort required to work these heroic slopes – and reach great heights, even in the face of years such as this, which has certainly not been without its challenges.

Our winemaking community has taken on 2020 without ever losing sight of its own essence. Of its very own sense of what is essential, primary, that is, the fields, vineyards, and the meticulous care that is required in ensuring that only the most promising bunches of grapes are brought to the cellar.

Nature, once again, has taught us that we must devote ourselves to the present as we look unwaveringly towards the future. Only then can we be assured that our roots will continue to carry us afar.

Innocente Nardi

*The Presidente of the Consortium for the Protection
of Conegliano Valdobbiadene Prosecco D.O.C.G*



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In order to fully understand Conegliano Valdobbiadene Prosecco Superiore, one must examine the legislative and regulatory frameworks in depth. In fact, these areas are also closely linked to the trend reported for the vintage under consideration; in most cases, they are dictated by particular regulations and ministerial decrees, however some measures are adopted following requests from public or private entities, which arise from technical-viticultural considerations (for example, adverse weather conditions).

Below we will analyse that measures already in force and the legislative innovations that characterized the 2020 viticultural vintage.

MEASURES ALREADY IN FORCE

→ Blocking of Claims

With Decree No. 86 of 15 July 2019, the Veneto Region suspended, for the 2019/2020 and 2020/2021 viticultural harvest, the registration of vineyards in the vineyard register for the purposes of eligibility regarding DOCG “Conegliano Valdobbiadene – Prosecco” claims for all areas planted or grafted after 31 July 2019 that consisted of the “Glera” main variety, “Verdiso, Bianchetta trevigiana, Perera, and Glera lunga” minor varieties, and complementary varieties to be used for the traditional additional corrective practice in the preparation of sparkling wine “Pinot bianco, Pinot grigio, Pinot nero and Chardonnay”.

The replanting and advance replanting of vineyard areas are already suitable for the production of the DOCG Denomination “Conegliano Valdobbiadene – Prosecco” are not included in the aforementioned provision. Furthermore, areas planted with vines in order to take advantage of replanting authorizations, issued by the same date, following the grubbing up of an equal area already suitable for the production of the DOCG Denomination “Conegliano Valdobbiadene – Prosecco”, are not included in the block.

For the purposes of claiming DOCG “Conegliano Valdobbiadene – Prosecco” status, regarding cases in which advance replanting procedures are activated, the simultaneous harvesting of the grapes produced from the not yet grubbed up vineyard, and from the vineyard replanted in advance is not allowed.

LEGISLATIVE NEWS FOR 2020

→ Regulation of Claims for the 2020, 2021 and 2022 Harvests

With Decree No. 102 of 21 July 2020, as a result of request made by the Consorzio di Tutela Conegliano Valdobbiadene Prosecco Superiore, the Veneto Region implemented the obligation, for the 2020/2021, 2021/2022 and 2022/2023 wine-growing harvests, to claim the Denomination Conegliano Valdobbiadene Prosecco DOCG for all producers who claimed the aforementioned Denomination in the 2019/2020 harvest. However, those who made use of claims other than Conegliano Valdobbiadene Prosecco DOCG in the 2019/2020 harvest, and who do so once again in the upcoming 2020/2021 harvest, will be also prohibited from claiming Conegliano Valdobbiadene Prosecco DOCG Denomination for the two subsequent harvests of 2021/2022 and 2022/2023.

→ Storage of 2020 Harvest Products

Regional Decree No. 103 of 21 July 2020 saw the implementation of the storage measure for quantities of product obtained from grapes in excess of:

- 10 t/ha up to the maximum permitted production of 12 t/ha for wines suitable for Conegliano Valdobbiadene Prosecco including wines suitable for Pinot and Chardonnay blending;
- 11 t/ha up to the maximum permitted production of 12 t/ha for wines suitable for Conegliano Valdobbiadene Prosecco which have been claimed and subsequently certified and marketed with the mention Rive, with the mention Vigna, and for those obtained from organic cultivation methods.

For vineyards in the second year of planting, for which a maximum production of 60% of that foreseen by the production regulations is allowed, storage refers to the quantities of product originating from grapes in excess of:

- 6 t/ha up to the maximum permitted production of 7.2 t/ha for wines suitable for Conegliano Valdobbiadene Prosecco including wines suitable for Pinot and Chardonnay blending;
- 6.6 t/ha up to the maximum permitted production of 7.2 t/ha for wines suitable for Conegliano Valdobbiadene Prosecco which have been claimed and subsequently certified and marketed with the mention Riva, with the mention Vigna, and for those obtained from organic cultivation methods.

Products from grapes destined for the production of Conegliano Valdobbiadene or Valdobbiadene Superiore di Cartizze DOCG wines are excluded from the storage measure. With the Regional Decree No. 136 of 9 September 2020, the clarification was formalized that, in order to take advantage of the reduced storage for wines bearing the mention “Rive di ...”, “Vigna” and for those obtained from organic cultivation methods, these wines must be placed on the market with the mentions stated above.

With the same provision it was established that products subjected to storage can in any case, from the date on which they are obtained, be destined for fall-back denominations if the vineyards from which they originate are suitable for the production of the relative denominations of controlled origin or IGT, with exclusion of the Prosecco DOC Denomination.

These products can be reclassified in the Prosecco DOC Denomination, regardless of the year of planting of the vineyards, only subsequent to the destination measure adopted by the Region following a request on behalf of the Consorzio Tutela del Vino Conegliano Valdobbiadene Prosecco. Products obtained from 20% of the harvest surplus are not affected by the measure.

→ Use of Wines suitable for Blending

With the same above-mentioned decree (No. 103 of 21 July 2020), with which the grape/ha yield was reduced, it was established that wines suitable for blending, to be used for the traditional corrective practice referred to in Art. 5 paragraph 3 of the Production Regulations, must obligatorily be used in the productions suitable for Conegliano Valdobbiadene Prosecco DOCG obtained in the 2020 harvest and later.

→ Storage of Products from the Preceding Harvest

With Decree No. 96 of 17 July 2020 the Veneto Region, following an agreement between the Consorzio di Tutela Del Vino Prosecco Superiore and the Consorzio di Tutela Denomination Prosecco DOC, notwithstanding resolutions No. 1155/2011 and No. 547/2012, established the use as a wine that is different to that which may be designated as Conegliano Valdobbiadene Prosecco DOCG, and at the same time the possibility of reclassification to the Prosecco DOC Denomination, also wines obtained from vineyards planted starting from the 2011/2012 harvest, as well as IGT wines or generic white wines.

Consequently, the situation is as follows:

- products stored in 2019 cannot be used as wines suitable for the Conegliano Valdobbiadene Prosecco DOCG Denomination;
- from the date of issue of the aforementioned Decree No. 96 of 17 July 2020, it is possible to reclassify production subject to storage in 2019 as DOC Prosecco, even if originating from vineyards planted as of the 2011/2012 harvest;
- it is also possible to reclassify the same products subject to storage in 2019 as white IGT wines or generic white wines.

→ Oenological Practices: enrichment

With the Decree No. 125 of 7 August 2020, the Veneto Region authorized an increase in the alcoholic strength by volume (a practice known as enrichment) of the products obtained from the 2020 harvest, our Denomination included. Please note that there is a maximum permitted increase of 1.5% vol. Should one wish to carry out the aforementioned practice, it is preferable that the Valoritalia control board be notified. One is reminded that, as far as sparkling wines are concerned, enrichment can also be performed at the moment of sparkling wine production (special enrichment), naturally starting from base wines not previously enriched in any of their components.

→ Establishment of the Regional List of “Vigna” mentions

This year’s regional “Vigne” list has been updated to include the following mentions:

- Vigna Del Baffo (traditional name);
- Sommaival (traditional name);
- Vigna La Rivetta (toponym);
- Pradase (toponym);
- Vigna Col Credas (traditional name);
- Vigneto Grave Di Stecca (toponym);
- Vigneto Della Riva di San Floriano (traditional name);
- Ochera (toponym).

→ Reduction of the minimum alcohol content of the grapes

With Regional Decree No. 140 of 14 September 2020, adopted following a request made by the three specific Protection Consortia “Conegliano Valdobbiadene Prosecco DOCG”, “Asolo Prosecco” and “Prosecco DOC”, a reduction of 0.5 degrees of the natural minimum alcoholic strength by volume was ordered for grapes destined for the production of semi-sparkling wines, sparkling wines, quality sparkling wines and quality aromatic sparkling wines.

This decision was made following the particular climatic conditions, which occurred between the end of August and the beginning of September, and which will be described in detail in the following chapters of this annual technical report “Bolle D’Annata”.

Figure 1

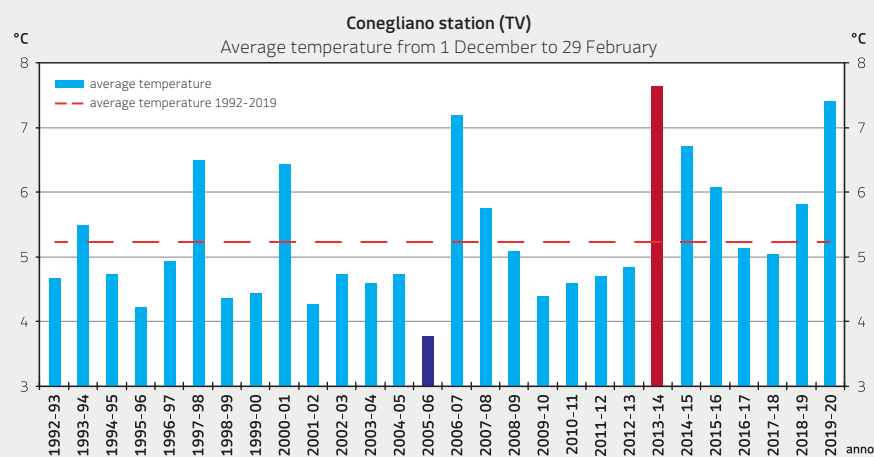


Figure 2

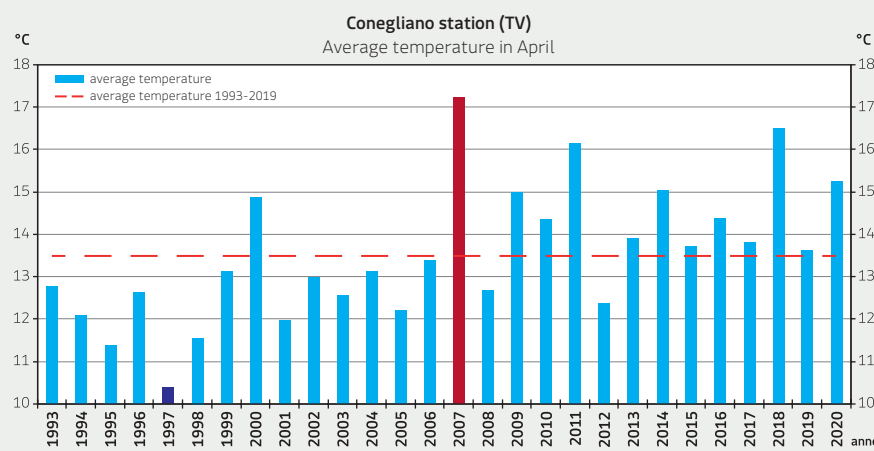


Figure 3

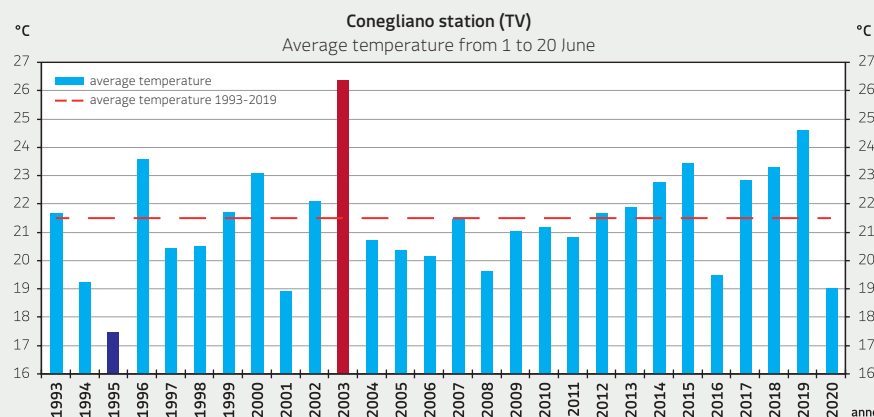
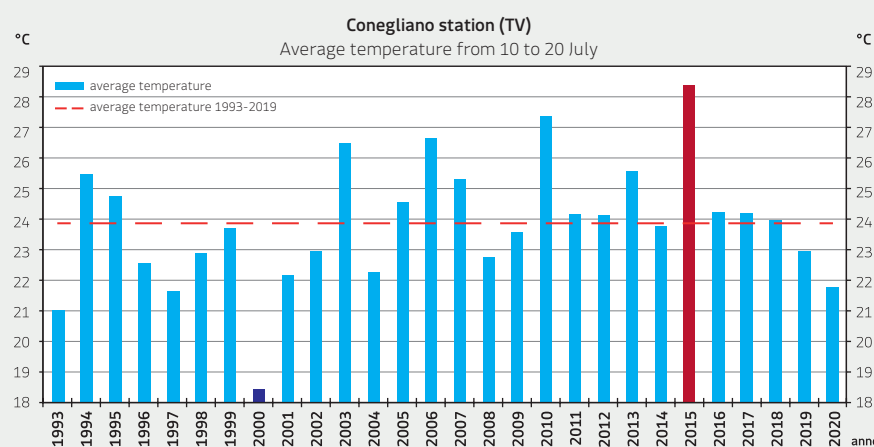


Figure 4



CHAPTER 02

The Meteorological Trend of the 2020 Viticultural Vintage on the Pedemontana Trevigiana

edit by **Francesco Rech – Fabio Zecchini**

ARPAV Meteorological Service

"Territory Security" Regional Department, Teolo (PD)

→ TEMPERATURES

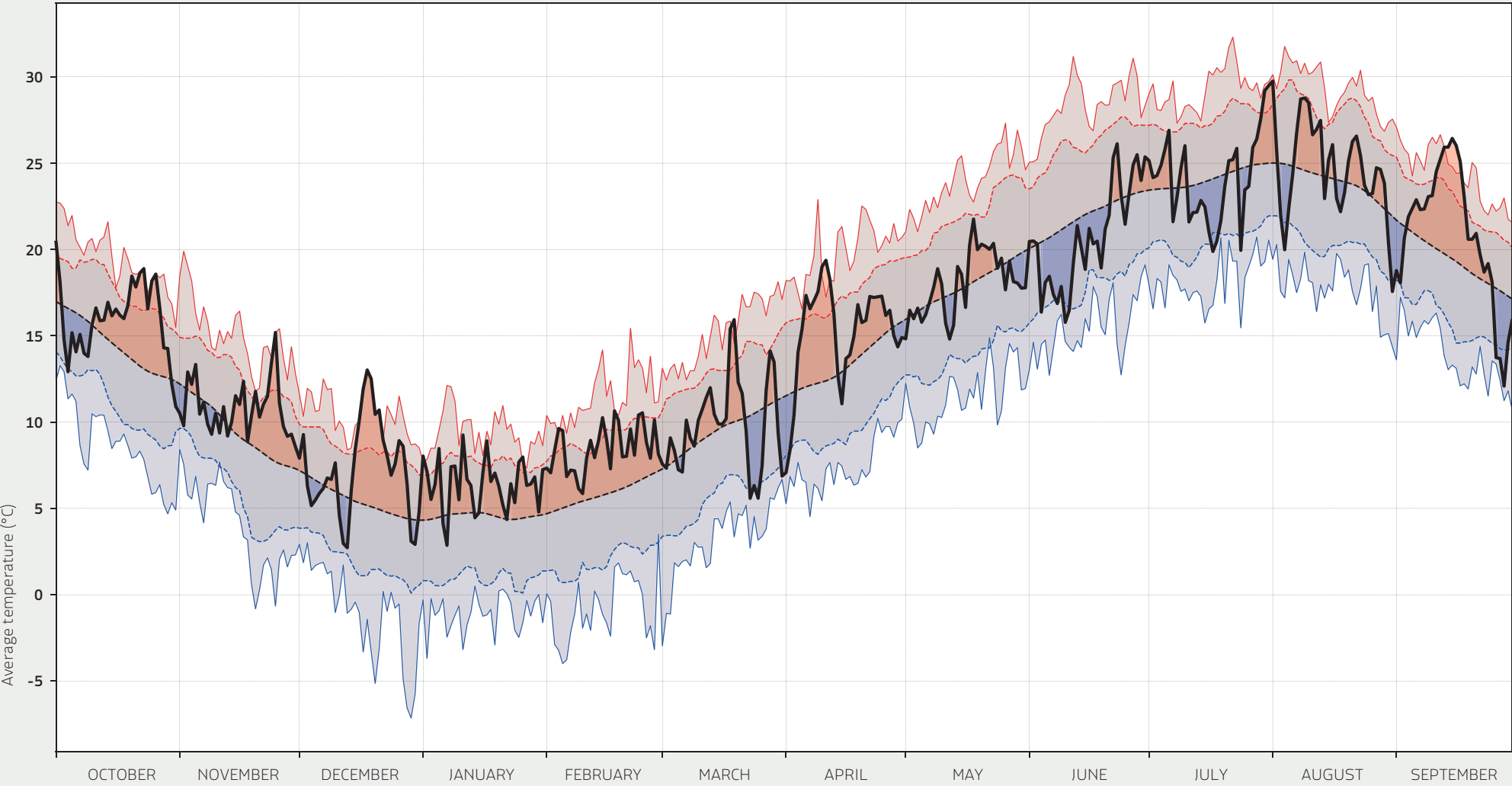
The average daily temperatures trend from October 2019 to September 2020 recorded at the Conegliano station (TV) highlights the following characterising elements:

- Temperatures fluctuated but tendentially were above average in the months of October and November, and up to the beginning of December.
- Thereafter, temperatures remained steadily and significantly above average, from mid-December to mid-March. In particular, Figure 2 shows how the December-February period of this viticultural season was the second warmest in the last thirty years, after the same period of 2013-2014 (Fig. 1).
- There was a sharp drop in temperatures between 22 and 26 March and between 30 March and 3 April; in various areas of the plains and Pedemontana, the minimum temperatures dropped below 0 °C. The last ten days of March reported average temperatures below the average of 1.4 °C.
- The month of April, typically characterized by variable and rainy weather conditions, instead showed stable weather and decidedly above average temperatures (Fig. 2).
- In May, temperatures fluctuated around the average, and there was greater atmospheric instability.
- The months of June and July, on the other hand, showed prevailing periods of temperatures decidedly below the norm, especially in the first 20 days of June (Fig. 3) and between 10 and 20 July (Fig. 4).
- While August reported temperatures that tended to be above average, it had however several periods in which thermal values dropped below the average (3-5, on 14, 18, 24 and 30-31 August).
- September was characterized by a central phase with much higher temperatures than usual (between 10 and 20 September average temperatures were 5 °C higher than the norm, making it the hottest in the last 30 years), followed by unstable weather with temperature values that were below average in the last ten days.

Considering the days in which the average daily temperatures exceeded 25 °C (a way of counting the approximate number of days with very high temperatures), in 2020 in Conegliano there were 37 days with high temperatures (in 2019 there were 50, with a maximum 72 days in 2003).

Regarding how the station progressed over time, between 27 July and 2 August, there were 7 consecutive days with an average temperature of above 25 °C, a further 7 days between 7 and 13 August, and finally 4 days between 20 and 23 August. The remaining days that exceeded 25 °C concern periods of 1-3 consecutive days.

AVERAGE DAILY TEMPERATURES TREND
FROM OCTOBER 2019 TO SEPTEMBER 2020
COMPARED WITH THE CLIMATOLOGY FOR THE PERIOD 1993/2019
CONEGLIANO STATION



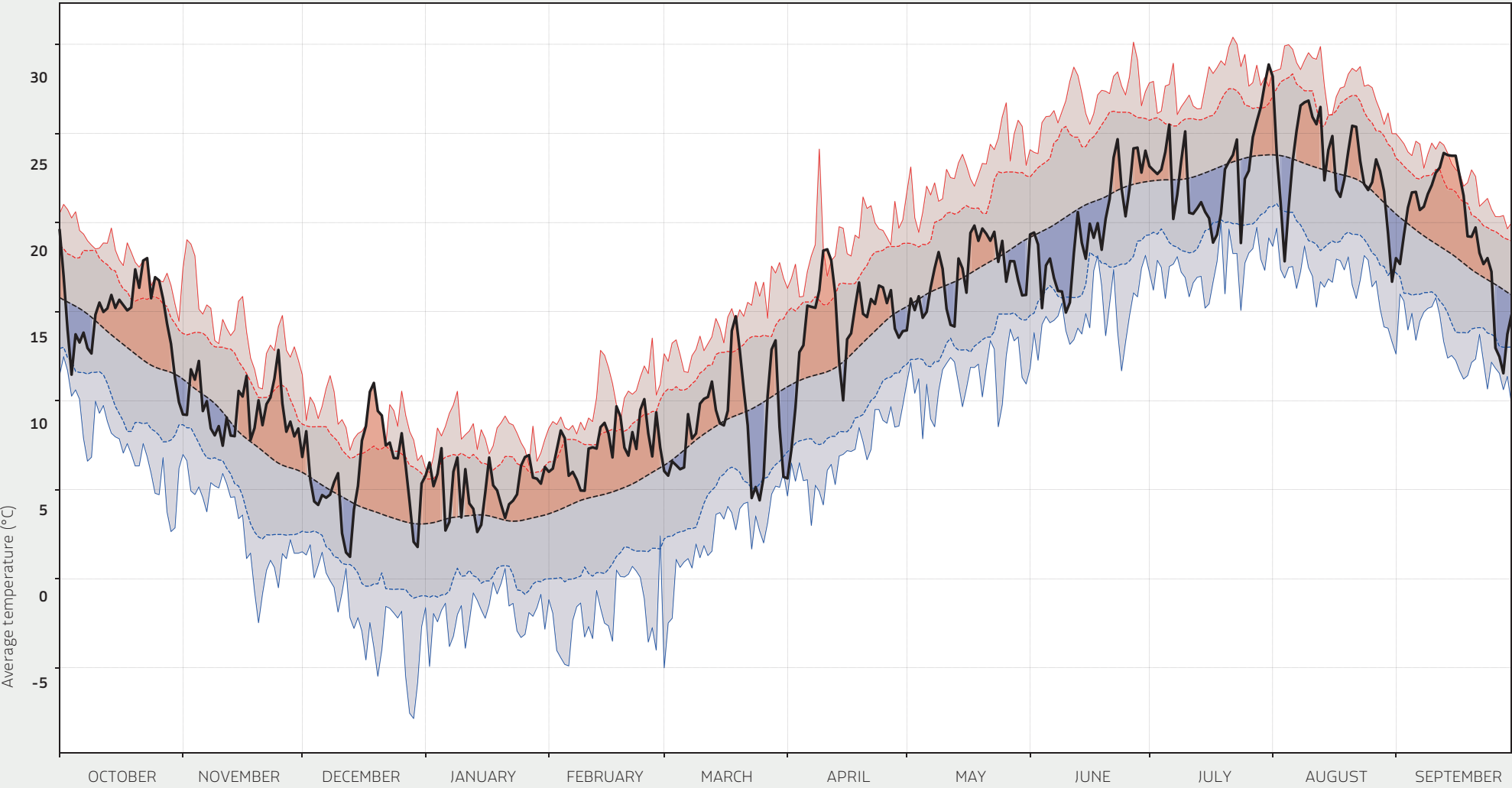
FROM OCTOBER 2019 TO SEPTEMBER 2020

	October	November	December	January	February	March	April	May	June	July	August	September
I ten days	15.4 (-0.9)	11.0 (-0.6)	6.7 (+0.1)	6.3 (+1.8)	7.5 (+2.3)	8.5 (+0.5)	14.3 (+2.2)	16.8 (+0.1)	18.2 (-2.5)	24.7 (+1.1)	25.7 (+0.6)	21.6 (+0.7)
II ten days	16.5 (+2.1)	10.5 (+1.2)	8.3 (+3.0)	6.7 (+2.1)	8.9 (+3.2)	11.8 (+2.0)	15.3 (+2.4)	18.3 (+0.5)	19.8 (-2.2)	21.8 (-2.1)	24.9 (+0.8)	24.3 (+5.0)
III ten days	16.1 (+3.3)	10.9 (+3.2)	7.0 (+2.4)	6.2 (+1.8)	9.1 (+2.5)	9.3 (-1.4)	16.2 (+1.0)	18.9 (-0.4)	24.1 (+1.0)	25.6 (+0.8)	23.6 (+0.5)	16.7 (-1.2)



Fig. 5 – Conegliano station (86 m a.s.l.) average daily temperatures trend in the period October 2019– September 2020 compared with the climatology for the period 1993-2019. The table below the graph shows the average values for ten-day periods, expressed in °C, of the current viticultural vintage, and how they compare with the average.

AVERAGE DAILY TEMPERATURES TREND
FROM OCTOBER 2019 TO SEPTEMBER 2020
COMPARED WITH THE CLIMATOLOGY FOR THE PERIOD 1992/2020
VALDOBBIADENE - BIGOLINO STATION



FROM **OCTOBER 2019** TO **SEPTEMBER 2020**

	October	November	December	January	February	March	April	May	June	July	August	September
I ten days	14.3 (-0.9)	9.8 (-0.7)	5.4 (+0.1)	5.3 (+2.0)	6.3 (+2.1)	7.2 (+0.2)	12.9 (+1.5)	16.0 (+0.1)	17.2 (-2.5)	23.2 (+0.7)	24.1 (+0.2)	20.4 (+0.9)
II ten days	15.5 (+2.2)	9.1 (+0.9)	6.2 (+2.2)	4.6 (+1.2)	8.0 (+3.3)	10.9 (+1.9)	14.9 (+2.8)	17.3 (+0.4)	18.9 (-2.0)	20.5 (-2.2)	23.9 (+1.1)	22.4 (+4.3)
III ten days	15.1 (+3.3)	9.6 (+3.1)	6.0 (+2.7)	5.4 (+2.2)	8.2 (+2.6)	8.2 (-1.6)	15.2 (+0.6)	17.8 (-0.7)	22.9 (+0.9)	24.5 (+0.9)	22.2 (+0.4)	15.6 (-0.9)

— Maximum

--- 10° percentile

--- 90° percentile

--- Average

— Minimum

— 2020 Temperature

Fig. 6 – Average daily temperatures trend of the **Valdobbiadene** station in Bigolino (225 m a.s.l.) in the period October 2019-September 2020 compared with the climatology of the period 1993-2019. The table shows the average values for ten-day periods, expressed in °C, of the current viticultural vintage and how they compare with the average.



→ PRECIPITATIONS

Overall, on the Pedemontana trevigiana one observes that monthly rainfall (Fig. 7):

- is clearly above average in November, June and August;
- is above average in December and March;
- is below average in the months of October, January, February and April;
- pluviometric values are within the norm in the months of May, July and September.

In Conegliano in the twelve months between October 2019 and September 2020, 1370 mm of precipitation fell; the average for the period 1993-2019 was 1260 mm. The values for the period are slightly above average (+ 9%). The Valdobbiadene station in Bigolino recorded 1759 mm of precipitation; the average for the period 1993-2019 was 1482 mm. The values for the period are above average (+ 19%).

The graph in Figure 8, showing the accumulated rainfall in Conegliano between October 2019 and September 2020, highlight, in the horizontal sections of the curve, the following situations in which there was an absence or scarcity of rainfall:

- from 22 December 2019 to 29 February 2020, 69 mm fell in 12 days;
- from 7 March to 27 April, 8 mm fell in 52 days;
- from 20 June to 5 July, 3 mm fell in 16 days;
- from 3 September to 21 September, there was no precipitation for 19 days.

On the contrary, the progressively ascending “serrated” lines highlight situation characterized by persistent conditions of unstable weather that in this case correspond with the following periods:

- from April 28 to mid-June;
- from mid-July to the end of August.

Finally, the sudden rises show consistent increases concentrated in short periods; for example, the significant rainfall in March is concentrated in the first 6 days of the month. Figure 9 (next page) shows the same type of graph for the Valdobbiadene station in Bigolino. Compared to the measurements recorded in Conegliano, levels of rainfall in October, June and August are considerably higher at this station.

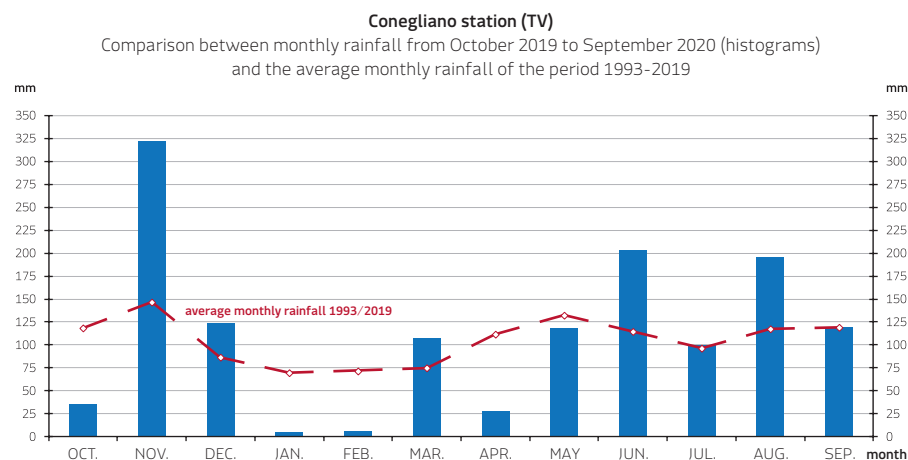
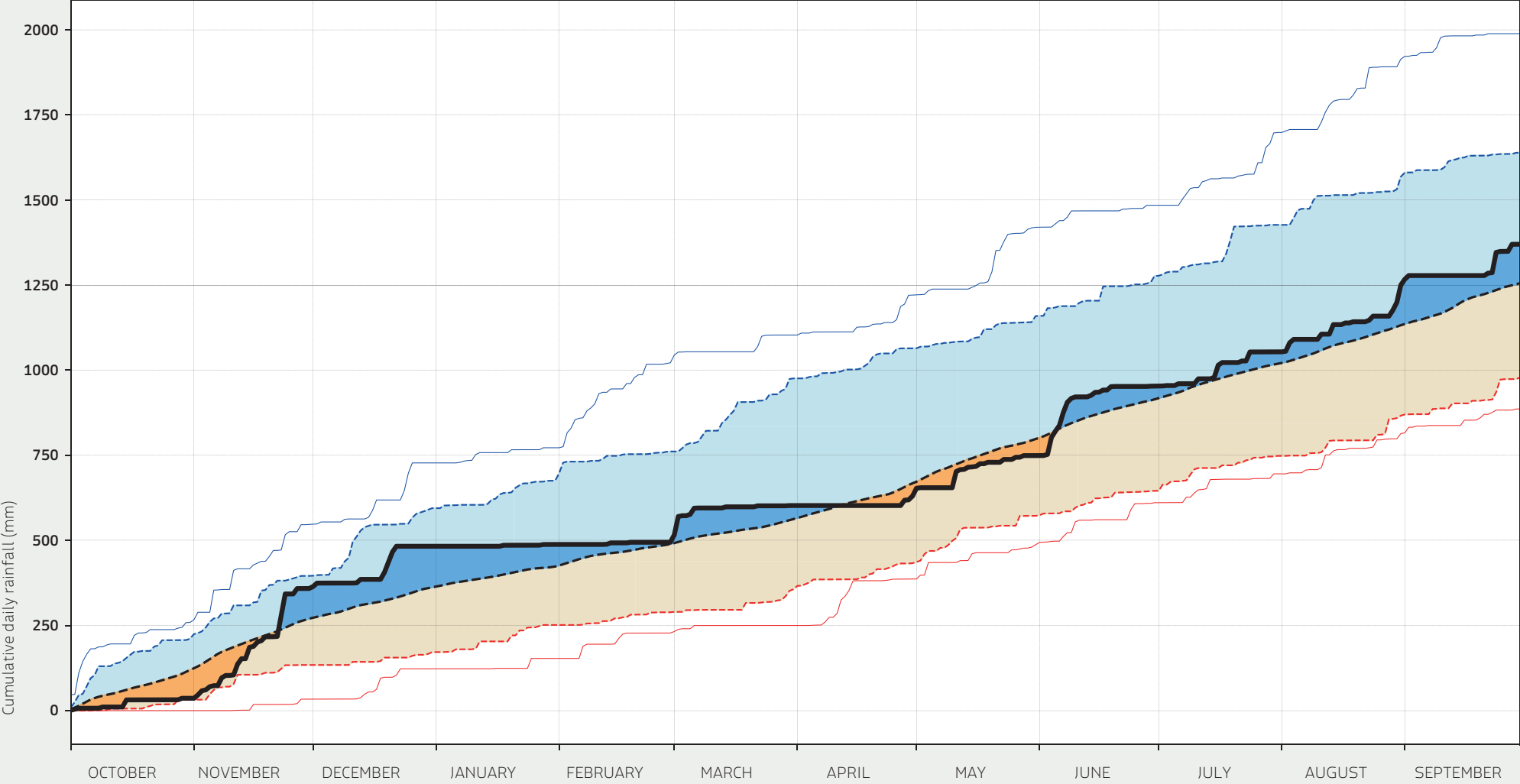


Fig. 7 – Comparison between the Conegliano station monthly rainfall from October 2019 to September 2020 (histograms) and the average monthly rainfall of the period 1993-2019 (red dashed line).

Conclusions

The 2020 viticultural season recorded above average temperatures, however with significant cold phases that affected the fundamental period between the end of May and Mid-June, and that also showed a fluctuating trend for the rest of the summer. Precipitation patterns were also irregular, being particularly scarce in winter and from 10 March to the end of April and, on the contrary, relatively frequent, at least in the Pedemontana and Prealps, for most of the summer. The middle of September was characterized by stable weather and very high temperatures.

ACCUMULATED DAILY PRECIPITATION
IN THE PERIOD OCTOBER 2019 – SEPTEMBER 2020
COMPARED WITH THE STATISTICS FOR THE PERIOD 1993-2019
CONEGLIANO STATION



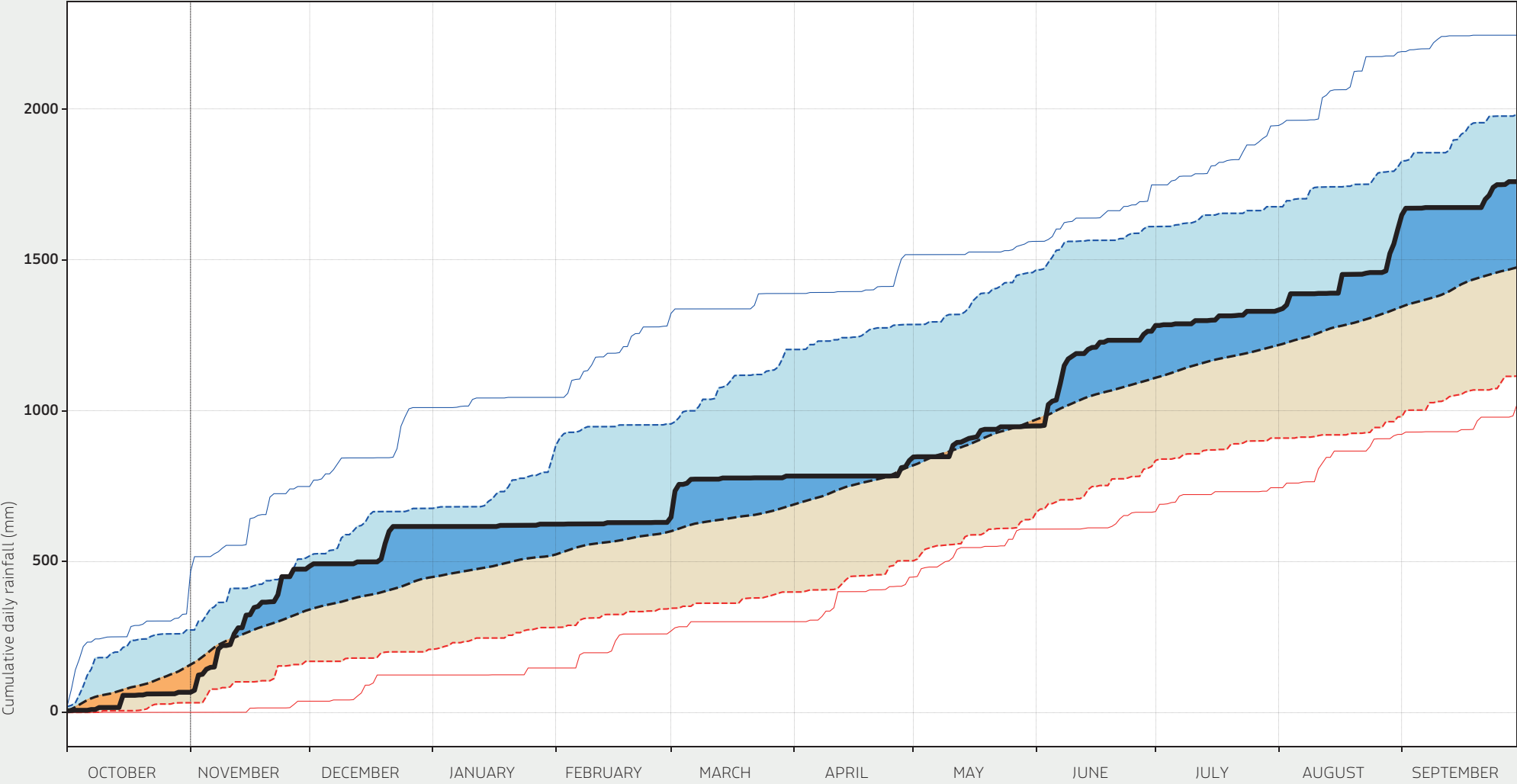
FROM OCTOBER 2019 TO SEPTEMBER 2020

	October	November	December	January	February	March	April	May	June	July	August	September
I ten days	10.8	67.0	16.0	0.0	0.0	100.6	0.0	24.6	172.4	7.4	37.0	27.8
II ten days	21.0	113.6	61.2	3.2	6.4	3.4	0.0	74.6	30.8	62.0	51.8	0.0
III ten days	4.6	141.8	46.8	2.2	0.0	3.8	27.8	19.6	0.8	31.0	107.8	92.0

- Maximum cumulative rainfall
- 90° percentile cumulative rainfall
- Average cumulative rainfall
- 10° percentile cumulative rainfall
- Minimum cumulative rainfall
- Cumulative daily rainfall in 2020

Fig. 8 – Graph shows the accumulated daily precipitation in **Conegliano** between October 2019 and September 2020 compared with the statistics for 1993-2019 period. The table below shows the 10-day rainfall values in the current viticultural vintage. All values are expressed in millimeters.

ACCUMULATED DAILY PRECIPITATION
FROM OCTOBER 2019 TO SEPTEMBER 2020
COMPARED WITH THE STATISTICS FOR THE PERIOD 1993-2019
VALDOBBIADENE - BIGOLINO STATION



FROM OCTOBER 2019 TO SEPTEMBER 2020

	October	November	December	January	February	March	April	May	June	July	August	September
I ten days	16.4	155.0	17.8	0.0	0.6	143.4	0.0	12.8	231.4	24.6	58.2	71.4
II ten days	41.4	143.6	67.2	3.8	4.6	3.8	0.0	90.8	52.6	26.4	64.8	0.0
III ten days	9.0	109.4	56.4	4.0	0.6	6.4	51.4	11.0	30.0	15.0	149.6	85.8

- Maximum cumulative rainfall
- 90° percentile cumulative rainfall
- Average cumulative rainfall
- 10° percentile cumulative rainfall
- Minimum cumulative rainfall
- Cumulative daily rainfall in 2020

Fig. 9 – Graph shows the accumulated daily precipitation from October 2019 to September 2020 at the **Valdobbiadene** station in Bigolino compared with the statistics for the period 1993-2019. The table shows the 10-day rainfall values in the current viticultural vintage. All values are expressed in millimeters.



CHAPTER 03 Phenology

edit by **Eleonora Rabassi**
Uva Sapiens S.r.l.

The development of the vegetation was monitored over the past agricultural vintage. This activity aim is to obtain detailed information on the development trends of the canopy in the investigated area, recording the peculiarities of the single vintages in order to analyse and possibly compare them. In this context, ca 2000 total observations were collected during the season, 360 of them on “reference historical vineyards” belonging to the Denomination (Fig. 1).

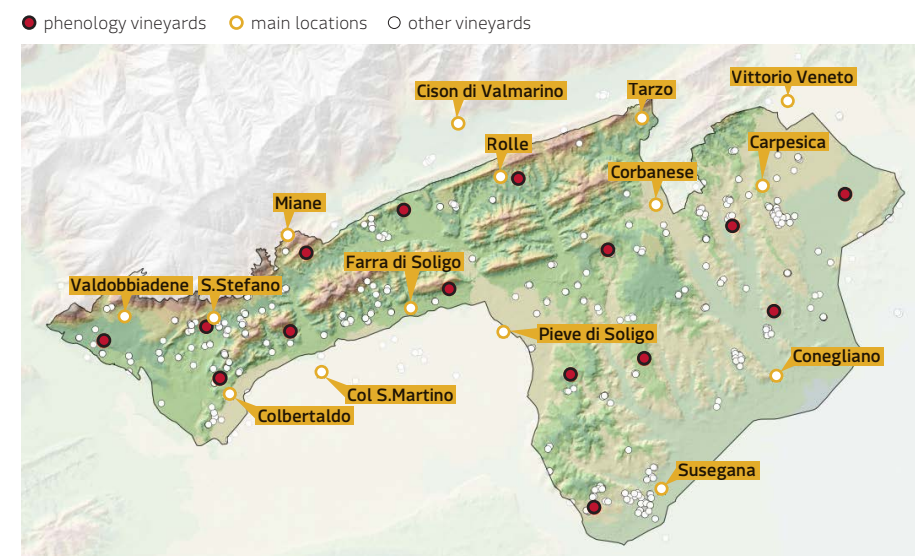


Fig. 1 – Location of the observation points in the Conegliano Valdobbiadene Prosecco Superiore DOCG area.

As compared to the past, the data related to the early budburst phase collected in the territory of the Denomination was rather scarce, due to the limitations imposed by the COVID-19 pandemic. Despite this, in the municipalities of Refrontolo, Colfosco, Conegliano and Collalto (southeast area), this phenological stage was recorded on 30th March. While in the municipalities of Colbertaldo, Valdobbiadene, Combai, Premaor and Rolle (northwest area), budburst began on 2 April. For both areas this stage was delayed than in 2016, 2017 and 2019 vintages, but was earlier than in 2018.

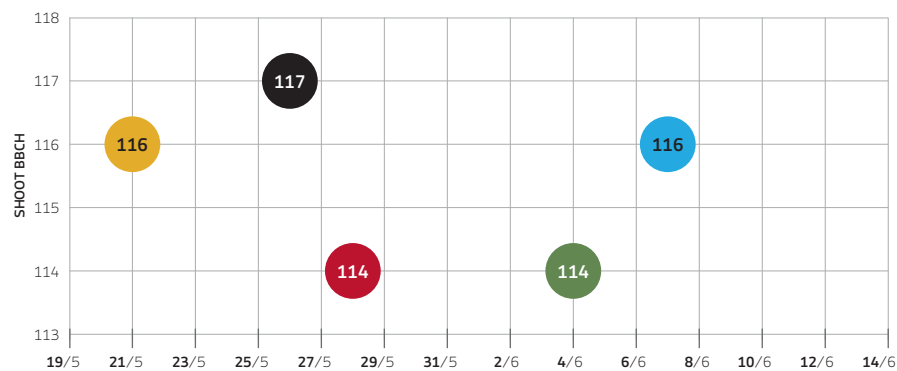


Fig. 2 – Flowering stage vs shoot growth dates, 2016-2020 vintages, southeast area (vintages: green 2016, red 2017, yellow 2018, blue 2019, black 2020).

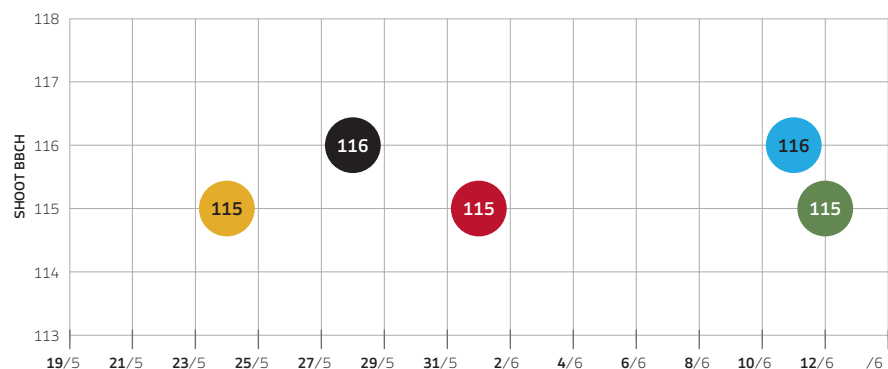


Fig. 3 – Flowering stage vs shoot growth dates, 2016-2020 vintages, northwest area (vintages: green 2016, red 2017, yellow 2018, blue 2019, black 2020).

	2016	2017	2018	2019	2020
Southeast area	4 June	28 May	22 May	7 June	26 May
Northwest area	12 June	1 June	26 May	11 June	28 May

Tab. 1 – Comparison of flowering dates (BBCH 65) among the 2016, 2017, 2018, 2019 and 2020 vintages, southeast and northwest areas.

The BBCH scale is a tool that allows to monitor the vegetation development, from the buds' winter dormancy to the ripening of the grapes. Each numerical code is an indicator and corresponds to a precise phenological phase (e.g., BBCH 25= development of 15 leaves on the shoot).

Figure 2 shows the development of the shoot in terms of unfolded leaves at the time of flowering (BBCH 65= full bloom: 50% of the calyptra have fallen) for the years 2016 to 2020 in the southeast area of the Denomination.

During full bloom, the number of unfolded leaves counted on the shoots ranged between 14 and 17. As regard, 2020 flowering occurred on 26 May with 16 unfolded leaves on the shoot. In 2018, for example, flowering occurred on May 22, with 16 unfolded leaves. For the remaining vintages, see Tab.1 and Fig. 2.

The northwest area also confirms these observations with between 14 to 15 leaves unfolded at the time of flowering. The comparison between the two areas, reveals an interesting fact: in 2020 shoot growing was fast and flowering (BBCH 65= full bloom: 50% of calyptra fallen) occurred in fairly early as compared to the other vintages (Tab. 1). The difference that always distinguished the two areas in the different stages of vine development remains clear. The warmer and milder Conegliano area was once again in advance as compared to the colder and more humid Valdobbiadene area.

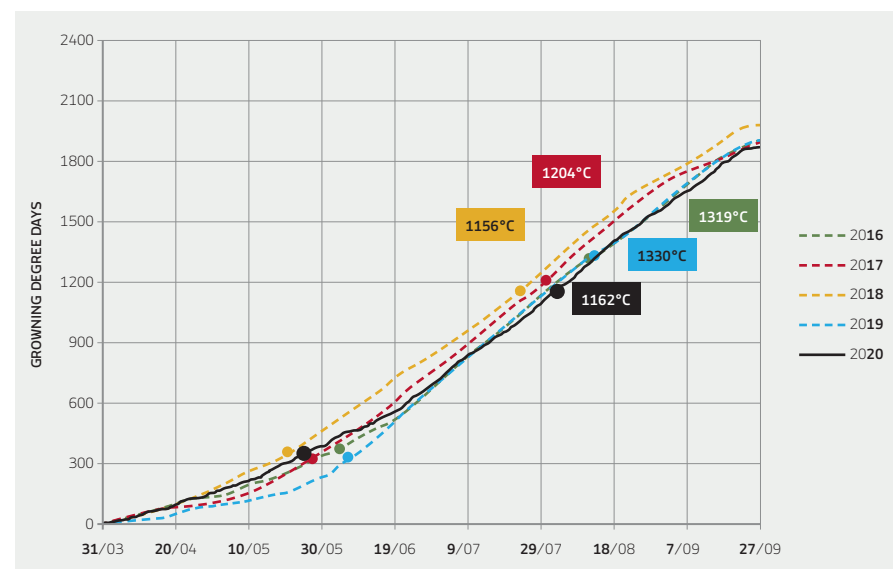


Fig. 4 – Trends of growing degree days in the seasons 2016-20 for the Conegliano area. The coloured dots on the curve refer to the growing degree days relative to flowering and veraison dates in the different vintages under comparison.

	2016	2017	2018	2019	2020
Average flowering date	4 June	28 May	22 May	7 June	26 May
Average veraison date	12 August	31 July	26 July	13 August	3 August
Number of days between flowering and veraison	69	64	64	67	69

Tab. 2 – Veraison dates for the years 2016, 2017, 2018, 2019 and 2020 and number of days between flowering and veraison, southeast area.

Flowering and veraison dates are affected by growing degree days, water availability and photoperiod (duration of daily light). The phenological observations carried out in our Denomination, while focusing exclusively on a single variety – the Glera – show temporal fluctuations of these target stages over the different vintages. The growing degree days (or Winkler index) are obtained summing the active temperatures difference between the average daily temperature and the temperature for growing, which is 10 °C in case of grapevine.

Therefore, by analysing trends over the different vintages in the Conegliano area (Fig. 4), one notes how the temperatures during spring 2020 evolved similarly to other seasons.

However, after the flowering, there was a slight flattening of the curve (black line), as following the unstable weather conditions of June. In that month, there was abundant rainfall (194.8 mm) with an average temperature of 20.4 °C, that resulted in a thermal gap compared to recent years that was not recuperated. As already pointed out in chapter 1, the summer 2020 was cool and even characterized by rains in August (average temperature of 24.4 °C, total rainfall 145.6 mm) and September (19.8 °C, 112.2 mm).

Despite of this, the average date of veraison for the southeast area in the year 2020 was recorded on 3 August. Table 2 shows how the interval between flowering and veraison remained almost constant over the years. To date, in order to estimate the veraison date, a winegrower might add between 64 to 69 days from the exact timing of flowering, thus consequently speculating the dates of the last phytosanitary interventions of the year. The considered intervals in the other vintages show a narrower range – as in the case of 2017 and 2018 – evidence of the warmer seasons occurred.

CHAPTER 04

The Phytosanitary features of the 2020 season (Plant Pathologies)

edit by **Eia Rancan**
Uva Sapiens S.r.l.

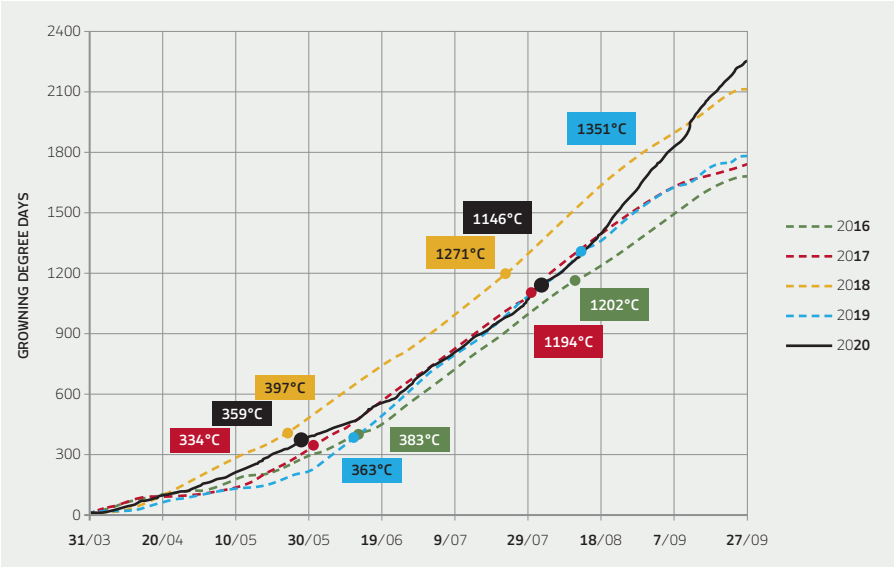


Fig. 5 – Trend of the growing degree days in the 2016-20 vintages for the Valdobbiadene area. The coloured dots on the curves refer to the growing degree days related to flowering and veraison dates in the different years under comparison.

	2016	2017	2018	2019	2020
Average flowering date	12 June	1 June	26 May	11 June	28 May
Average veraison date	12 August	31 July	24 July	18 August	3 August
Number of days between flowering and veraison	61	60	59	68	67

Tab. 3 – Veraison dates in the 2016, 2017, 2018, 2019 and 2020 vintages and number of days elapsed between flowering and veraison, northwest area.

Figure 5 examines the trend of growing degree days with respect to flowering and veraison stages in Valdobbiadene area. The black line, representing the seasonal evolution of 2020, follows an average trend as compared to other years. In order to achieve the average flowering, recorded on 28 May, a total of 359 °C was required, while veraison was recorded on 3 August with a total of 1146 °C. For this area 67 days elapsed between the flowering and the veraison phase (Tab. 3).

	2016	2017	2018	2019	2020
Harvest	19/09	19/09	28/08	16/09	15/09
Days between veraison and harvest	38	38	35	34	43
Days between flowering and harvest	107	102	98	101	112

Tab. 4 – Harvest dates in the 2016, 2017, 2018, 2019 and 2020 vintages and the number of days elapsed between veraison and flowering, southeast area.

Comparing the harvest dates over the years with those of flowering and veraison, one notes that the number of days between the different key phenological stages of grapevine remained more or less constant. Therefore, at the beginning of the season, the winegrower may already have quite precise indications regarding the conclusion of spraying and harvest dates. The vintage 2018 is remembered for the rapid ripening of the grapes and consequently the early harvest (28 August); in 2019 flowering was delayed (7 June), but offset by a harvest in line with the average dates of the Denomination. In contrast, 2020 is considered what is called a “long” vintage: 43 days were required from veraison to grape maturation, further confirming the lower temperatures that occurred this year.

As in the last seasons, also in the year 2020 agronomic bulletins including the guidelines for the grapevine pest management were distributed to members.

The topics discussed are dealing with the most important pathogens, certain phytophagous insects, wood diseases and the correct agronomic practices to be implemented in the vineyard.

The vintage also coincides with the tenth edition of the Conegliano Valdobbiadene Prosecco Superiore D.O.C.G. Viticultural Protocol, whose principals have been adopted by the 15 municipalities of the Denomination.

This tool, in addition to implement the directives foreseen by the integrated defence of the Veneto Region, administers further restrictions aimed to improve sustainability in the pest and agronomic management of the vineyard. The technical team of the Consorzio based its drafting of the bulletins on a range of elements including:

- the constant survey of the Denomination’s vineyards;
- daily analysis of weather forecasts;
- the consultation of forecast models (DSS) regarding the main plant diseases managed by Horta SRL.

Such management allows the use of active substances in periods in which they are most effective, on the basis of their mechanism, while also reducing residues on the grapes.

The last viticultural season required targeted interventions, especially in the containment of the main fungal diseases, such as downy mildew and powdery mildew, without neglecting minor plant diseases such as botrytis, especially during the ripening stage, and certain phytophagous insects.

Carried out on a weekly basis on the Denomination’s vineyards, these checks allowed for a general overview of the territory, and were intensified in more critical timings.

The dynamics of the evolution of the main fungal diseases during the vintage are reported below.

→ DOWNY MILDEW

Since the biological cycle of this pathogen is closely related to the seasonal meteorological trends, the data from the Valdobbiadene weather station are reported on the graphs, which highlight the distribution of rainfall on one side, and the dynamics of the downy mildew infections as calculated by the forecasting model (DSS) on the other, (Fig. 1).

Under certain environmental conditions that are linked to humidity and temperature, fungus oospores germinate in the soil and, after heavy rains, give rise to infective zoospores that trigger primary infections when in contact with vegetation.

More than 1500 checks were carried out during the year in order to depict a general idea of phytosanitary situation.

Despite a substantially dry period, the rainfall towards the end of March triggered the germination of oospores in the soil, as shown in *figure 1* (blue dots).

In this time period, as already described in the phenology chapter, bub break had recently begun and was therefore not susceptible to infections by the pathogen. There followed 47 mm of rain that fell mainly in the last 3 days of the month. This period led the system to highlight possible infections on growing vegetation (the red rhombuses in *figure 1*), therefore the Consorzio technical team recommended the first intervention against downy mildew on 24 April.

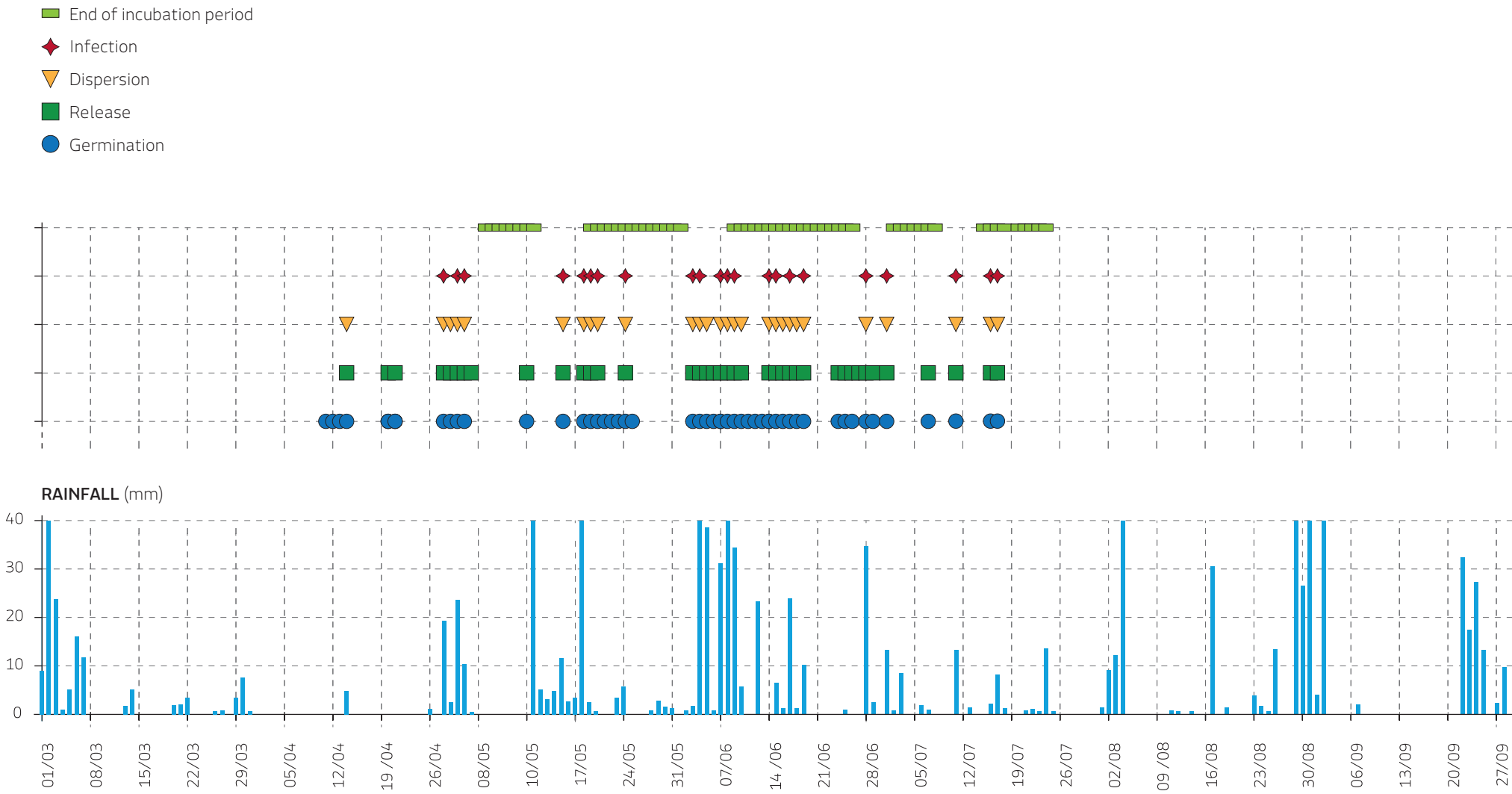
The first and last week of May were mild and sunny, while unstable weather conditions characterize the middle of the month, and the vine was exposed to multiple infections by the main diseases.

More specifically, from 10-24 May, the system detected several possible infections, albeit in a short period of time, caused by the almost 100 mm of rain that fell in that period. From the surveys carried out in the field, the first spots on the leaves were found at the end of the month in a few vineyards' sites in the eastern part of the Denomination and could be attributed to the repeated infections that occurred around 17 May.

These findings were sporadic and confined to certain vineyards where the phytosanitary pressure exerted by the pathogen was stronger.

June was characterized by a "record" pluviometric accumulation compared to historical averages, with as much as 311 mm of rain falling almost entirely in the first twenty days. This resulted in a critical phase for the vine in which numerous infections were calculated by the system (red diamonds in *figure 1*).

Fig. 1 – Evolution on **primary downy mildew infections** predicted by Horta SRL's Vite.net Decision Support System (Spin Off of the Università Cattolica del Sacro Cuore of Piacenza) for the Valdobbiadene station.



Through checks carried out on the vegetation, illustrated in *figure 2*, it was possible to verify that the spread of the pathogen generally accounted to less than 1% or was almost absent on the leaves (pink dots on the map) in almost all sites, except for certain vineyards in which the severity ranged between 2-5% (dark pink dots on the map) and 5-15% (red dots on the map).

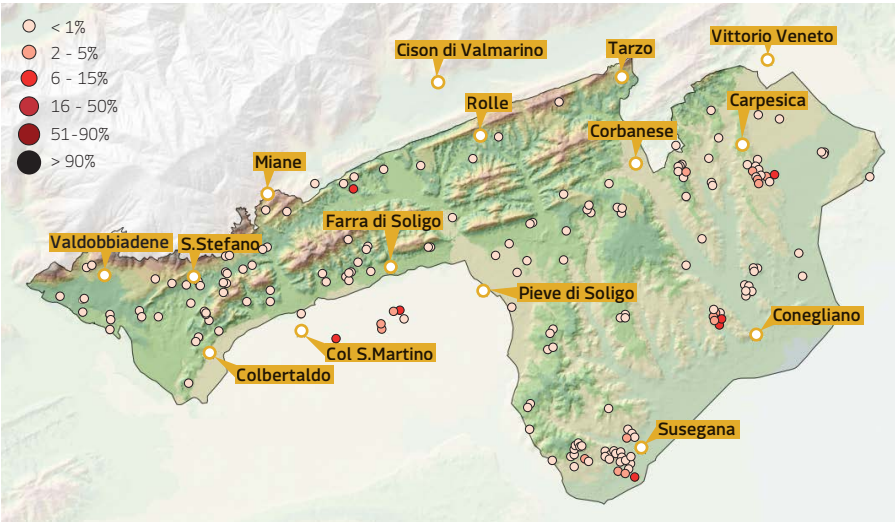


Fig. 2 – Territorial distribution of downy mildew on leaves in **June**.
Dot size and colour indicates the incidence within the vineyard (see *legend*).

After the fungus penetrates the leaves, an incubation period is needed to see spots on the upper side of the blade; this period is inversely correlated with the temperatures. This explain why primary infections within the territory were still limited in June, a month characterized by temperatures below historical average. July was characterized by alternating sunny and unstable climatic phases and lack of significant pluviometric accumulations, which might have posed serious risks to the vegetation.

Despite this, there was an increase in the presence of fungus within the territory.

As shown in *figure 3*, and as different to June, the spread of the pathogen was more homogeneous and severity was more intense (red points) over almost the entire Denomination. The areas most affected were the hills between Valdobbiadene and Farra di Soligo, and the plan vineyards in the eastern and southern portions of the Denomination.

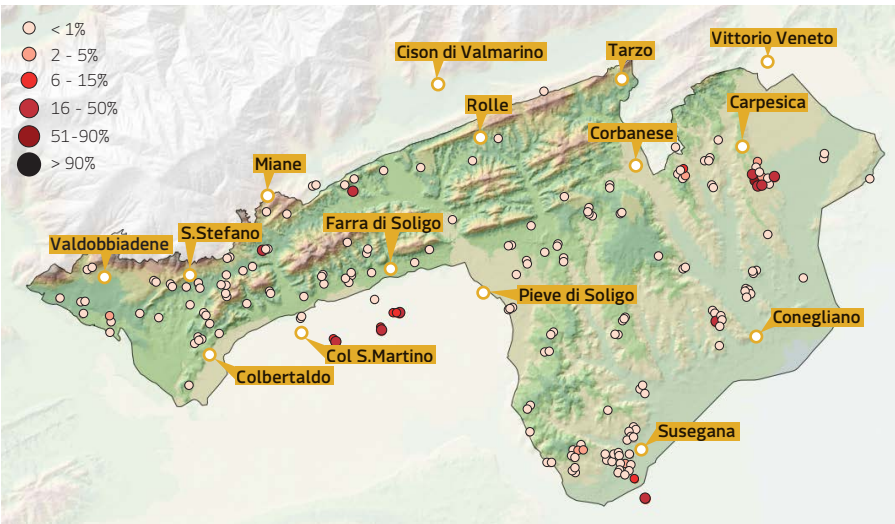


Fig. 3 – Territorial distribution of downy mildew on leaves in **July**.
Dot size and colour indicates the incidence within the vineyard (see *legend*).

Data analysis shows how an increase in temperatures at the beginning of the month led to the appearance of symptoms on the vegetation.

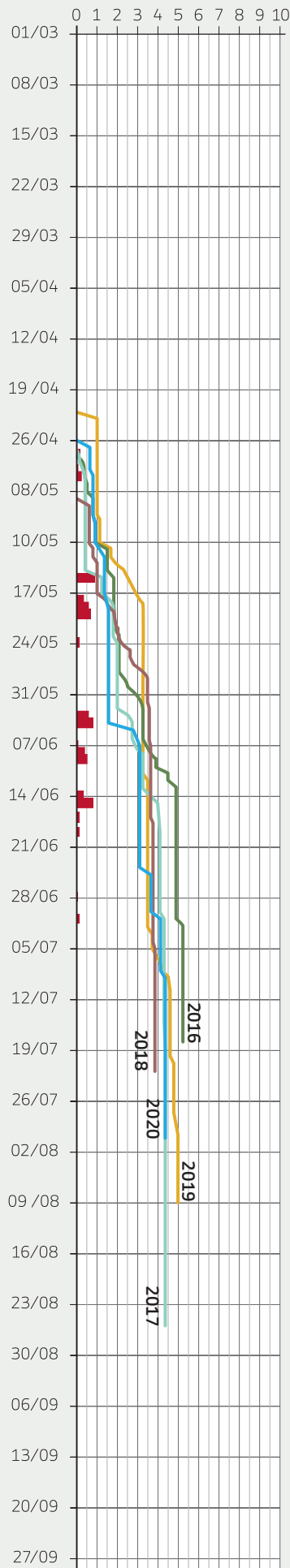
The increased spread of the fungus mainly is due to secondary infections that occurred in the vineyards where the pathogen was already present in June, albeit to a limited extent. July brought optimal meteorological conditions for the development of the pathogen, helped by relatively high humidity levels, and consequent leaf wetness, as well as the milder temperatures of this period.

There was no significant change regarding the downy mildew for the last part of the season, despite the rains recorded in August, and thanks to the veraison that occurred earlier than in previous years. In general, the primary infections found in the vineyard between the end of May and the beginning of June, mainly concerned the upper parts of the vegetation which were already in an advanced stage of development (an average of 12 leaves per shoot, as described in the phenology chapter).

Consistent rains in June then triggered secondary infections that were recorded in the vineyards in July, symptoms that, in most cases, were registered on the laterals or on young developing leaves. Regarding inflorescences or grape bunches, the infections were contained in all areas; in fact, very few sites recorded the presence of the pathogen, with less than 5% of bunches or inflorescences affected. Possibly, the limiting factors in this situation may be attributed to:

- difficulties in carrying out interventions in hilly areas following constant and abundant rainfall in June
- the dense and wild canopy that did not permit effective penetration by pesticides against downy mildew.

The season then continued with the use of coverage substances against downy mildew, and concluded with the last recommended intervention of the beginning of August, at the phenological stage of 50% veraison.



Comparison of the amounts of downy mildew inoculum present in the vineyard

- 2016
- 2017
- 2018
- 2019
- 2020

Valdobbiadene station data
Figure shows the dynamics of the cumulated infections over the last 5 vintages .
Each curve shows the amount of oospores that triggered a new infection due to optimal conditions during the season.
The 2020 curve (light blue) shows two rapid growth phases coinciding with the wettest periods of the year, confirming that the most critical phases were recorded in the middle of May and in the first twenty days of June.
Compared to the other vintages, 2020 shows a very similar trend to 2017, with oospore growth stopped initially due to a short period of stable weather, which changed over the months that followed.
The total inoculum of the year is also in line with what reported in 2017, and is lower than those of 2019 and 2016.
Overall, the dynamics of infection reveal that the year had a medium-low pressure exerted by pathogens.

→ POWDERY MILDEW

This fungus over winters in the vineyard in two different forms: as a mycelium in infected buds, and as a fruiting body in cracks in the wood.
Primary infections, called ascospores, occur in correspondence with rainfall events – even of a few mm – and temperatures above 10 °C, and infect the green organs of the vine, in particular the basal leaves of the shoots.
The process entails the ascospores go out of the cleistothecia, and start the primary infection process. As climatic conditions change, the primary infection evolves into the secondary infection, also known as the conidial.
The conidia deriving from ascospores infect the vegetation and especially the grape bunches. The climatic factors required for this phase are: the absence of rain for a prolonged period, average temperatures ranging between 20 °C and 30 °C, and high relative humidity.
In 2020 the timing of greatest sanitary pressure regarding primary infections coincided with the episodes of rainfall, which occurred in late April, mid-May, and the first twenty days of June.
On the contrary, given the characteristics of this pathogen, the risk of secondary infections was concentrated at the end of the months of May and June, i.e., the only periods of stable weather conditions up to this point of the season.
These considerations are the result of calculations regarding powdery mildew infections by the forecasting models (DSS) connected to the Valdobbiadene station.
The observations carried out in the field during this period did not record infections on the vegetation, except in case of a reference vineyard in which the first secondary infections on bunches dated back to June 17, confirming the dynamics of infection suggested by the system.
The data therefore confirms that the pressure exerted by the disease has not been particularly high within the territory for 2020. Consequently, from the beginning of July, the use of covering molecules such as sulphur was recommended in the agronomic bulletins. In late summer, direct sunlight, temperature above 35 °C, and the washout effect of the mycelium due to heavy rain hindered the spread of the disease.

→ BOTRYTIS

Botrytis, together with downy mildew and powdery mildew, represents one of the main diseases for the vine, and is caused by a pathogenic fungus called *Botrytis cinerea*, which infects all organs of the vine, especially the grape bunches. In favourable vintages that are characterized by prolonged rains and high relative humidity, it can cause significant economic damage. Botrytis is dispersed within the vineyard by wind and rain, and mainly in the form of conidia (fungal spores).

The most susceptible periods of the year, during which pesticide interventions against botrytis are generally carried out, are:

- the bunch pre-closure phase, given the fungus spores' high levels of affinity towards the structural components of the bunch (pedicel, rachis and lateral branches). Furthermore, botrytis can cause direct damage, such as the desiccation of the smaller bunches or individual flowers, as well as indirect damage, such as the latent colonization of flowering residues or berries;
- if environmental conditions are favourable, the latter will develop infections during the ripening phase of the grapes, the intermediate phase between veraison and harvest, when skin thickness diminishes. During the stages of berry, the vine produces substances that inhibit the activity of the fungus; however, this ability ceases once veraison is reached.

The application of specific phytosanitary interventions can be produced, or avoided, if certain agronomic practices aimed at creating an unfavourable microclimate for the development of the fungus around the grape bunches, are applied during the year. A list of which are reported as follows:

- the correct application of nutritional elements in order to avoid creating a canopy that is too thick;
- the management of the leaf wall through shoot thinning, cluster thinning and leaf removal;
- the containment of other plant diseases such as downy mildew, powdery mildew and vine moths, which can cause skin lacerations creating points of entry for botrytis.

Furthermore, grape bunch structure – i.e., loose or compact – results in different varieties being more or less susceptible to infection.

Fig. 5 – The dynamics of *Botrytis cinerea* infections calculated by the DSS for the Valdobbiadene station.

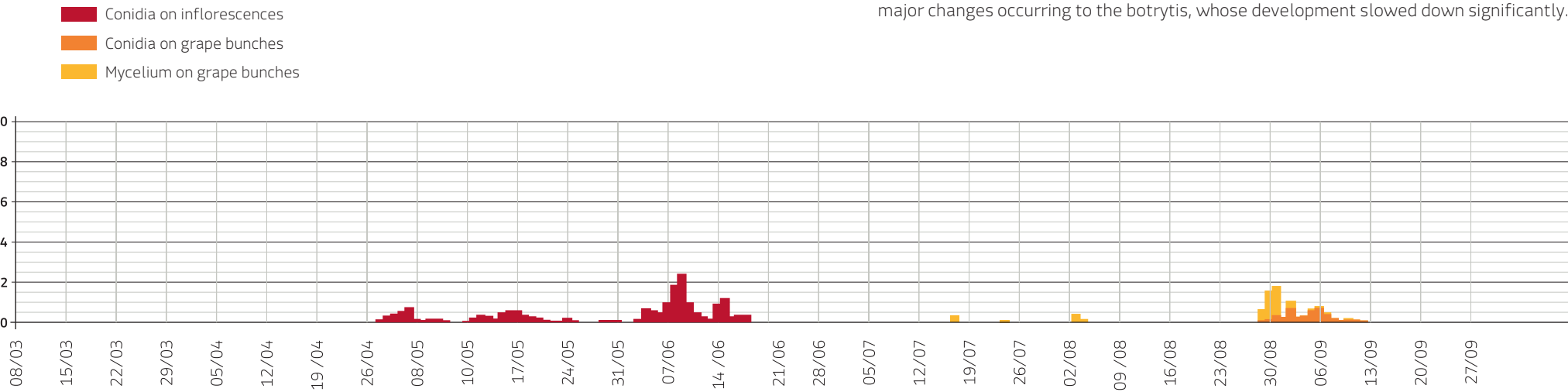


Figure 5 shows the dynamics of botrytis infections in 2020 as reported by the DSS model connected to the Valdobbiadene station. It should be noted that the weather station reports the dynamics of infection calculated on the basis of meteorological data and the phenological phases of the vine, but does not take into account the adoption of beneficial agronomic practices such as those mentioned above, or of meteorological events such as hail that may cause the grapes to split.

The brick-red colour refers to infections of the inflorescences while the orange and yellow colours correspond with those on the grape bunches. It should be noted that during the set, which took place in the very rainy period in early June, the system foresaw the possibility of infections, even if of negligible importance.

Despite the adverse weather conditions, the monitoring did not reveal any damage to the vineyards, also thanks to the Glera variety's generally sparse bunch, which results not being hardly infected during this stage of development.

At the time of veraison – which began in early August – and the subsequent ripening phase, episodes of unstable weather with thunderstorms of varying intensity were recorded.

These events occurred in the first and last ten days of August. In figure 5 the orange and yellow bars show the dynamics of infection foreseen by the system: it is evident how levels are higher in the period that corresponds to the rainfall towards the end of the month. In fact, starting at the beginning of September, outbreaks of botrytis were detected in some of the monitored vineyards.

In general, the fungus in the various sites reported an average incidence on bunches between 15% to 30%. However, infection intensity on the single bunch was minimal, as only 2-3 berries were affected by grey mould. Given these findings, no specific sanitary intervention was recommended, thus the possibility of residue on the grapes during harvesting due to the use of certain products was avoided.

In this phase, the use of pesticides against botrytis would have a limited effect on the mycelium that was already active; however, it would be useful to carry out targeted leaf removal to allow the affected grapes to dry quickly due to the combined action of sun and wind exposure. There may be a number of factors – specific to each individual area – which led to a greater incidence of botrytis than in previous years.

From a general point of view, the main causes were heavy rainfall in August and hail-storm in events that occurred in the post-veraison phase. Furthermore, in certain vineyards, a greater presence of vine moths during the vintage favoured the growth of fungus on the grape bunches. From a meteorological point of view, there was a turnaround in September with high pressure bringing stable and mild weather that lasted almost to the end of the month, allowing most winemakers to end the harvest without any major changes occurring to the botrytis, whose development slowed down significantly.



CHAPTER 05

Insects

edit by **Leone Braggio**
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The most common insect pests occurring in the Conegliano Valdobbiadene territory were monitored during the 2020 growing season.

In particular, sampling concerned the leafhopper *Scaphoideus titanus* – vector of Flavescence dorée phytoplasma – and vine moths due to the damage they cause to grape bunches.

FLAVESCENCE DOREE

The leafhopper *Scaphoideus titanus* is responsible for the transmission of Flavescence dorée phytoplasma that, as part of the grapevine yellows complex, causes considerable damage to vineyards.

For several years, this pest has been monitored within the territory of the Denomination with the aim of improving prevention and spread of Flavescence dorée disease on the various areas.

Flavescence dorée prevention is based on some widely accepted key practices:

- the detection and eradication of symptomatic plants present in vineyards;
- the monitoring of vectors;
- the application of insecticide treatments.

Every single practice is of crucial importance for containing the disease; the eradication of symptomatic plants reduces hotspots in vineyards, while monitoring vectors help to establish the most suitable time for insecticide treatments in order to maximize their effectiveness.

During the growing season, symptoms of the disease involve different organs such as leaves, shoots, and inflorescences or bunches.

The specific symptoms to be identified are:

- reddish or yellowish leaves depending on the variety, papery consistency of leaf blades and downward folding at the edges;
- shoots may develop irregularly with short internodes, characterized by a rubbery consistency with dark spots at the base, and a lack of lignification in autumn;
- early symptoms include the drying out of inflorescences, while with later symptoms the bunch tends to wither.

The leafhopper, feeding on infected leaves, acquires the phytoplasma and subsequently transmits it to healthy plants. That is why it is essential to identify the symptoms in the field and to proceed with the grubbing-up of infected plants. It should be noted that symptomatic plants in any vintage are due to infections that occurred in previous years.

The leafhopper *Scaphoideus titanus* completes a single generation per year. Adult females lay their eggs in summer under the rhytidome of wood that is two or more years old. In the following May, eggs begin to hatch, initiating the insect's life cycle (5-nymphal stages are needed before to reach the adult stage).

The juvenile stages of the insect are characterized by two symmetrical black notches on their last abdominal segment; this peculiarity helps to their identification during field monitoring.

Figure 1 shows all developmental stages of *Scaphoideus titanus*. First and second nymphal stages are about 1-3 mm in length, and whitish in colour. The third nymphal stages are pale yellow, fourth nymphal stages are dark yellow and fifth nymphal stages show brownish pigmentation along the thorax and the abdomen. The older nymphs reach from 3 to 6 mm in length, while adults can reach 8 mm in length.

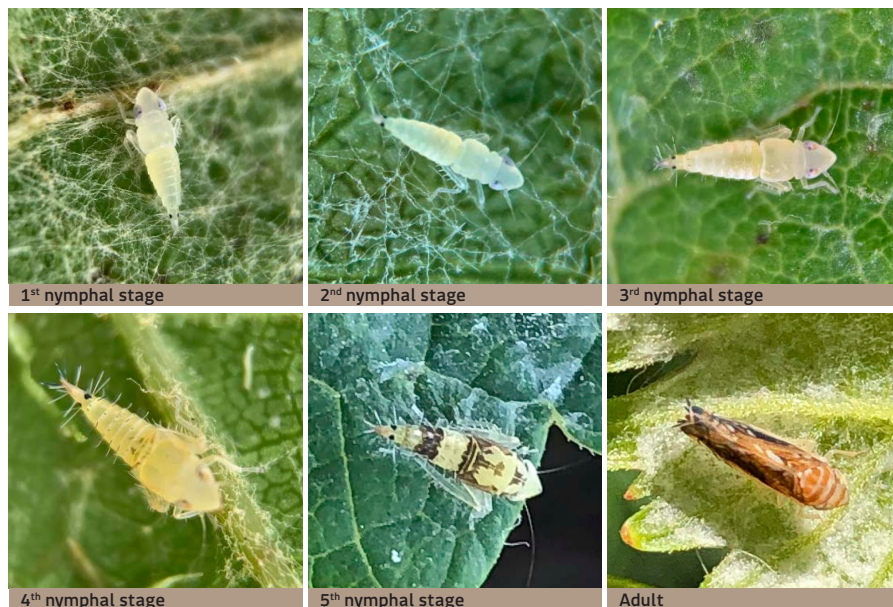


Fig. 1 – Developmental stages of *Scaphoideus titanus*.

Familiarity with the insect's life cycle is essential because only some stages can transmit phytoplasmas to healthy plants. Transmission of phytoplasmas can be carried out by aged nymphs or adults. Furthermore, eggs hatch gradually throughout the year and consequently the specimens present in the vineyard may be in different stages of development.

Given these characteristics, it is essential to monitor insects in the vineyard in order to apply insecticide treatment in a way that allows it to come into contact with and neutralise the maximum number of specimens present before they have reached the stage of development in which they are infectious.

At the beginning of June, the Veneto Region issued decree No. 34 of 4 June 2020 in compliance with the Ministerial Decree of 31 May 2000, which foresees that insecticide treatments are mandatory in all vineyards, both productive and those not yet in production. Two insecticide applications are recommended in organic vineyards.

Unlike in past years, in which insecticide application was mandatory only in cases where the presence of vectors was confirmed, in the province of Treviso in 2020, the mandatory nature of the insecticide intervention was extended to any existing vineyard, both productive and not, regardless of the presence or absence of *Scaphoideus titanus*. This decision was based on analysis of the monitoring carried out over the previous years, which showed a significant increase in the presence of vectors, and consequently in the Flavescence dorée, especially in some very specific viticultural areas such as that of Conegliano Valdobbiadene.

Regarding the 2020 vintage, insect monitoring began in June by counting the juvenile stages on suckers and subsequently, with the aid of chromotropic traps, checks were carried out on adult populations after insecticide treatment.

→ Vector monitoring

The first phase of monitoring of the juveniles of *Scaphoideus titanus* consisted of sampling the suckers located along the trunk, given that juveniles settle mostly on the underside of the leaves.

285 checks, covering 98 different vineyards, were carried out; in 66 of these, the presence of vectors was noted as early as 8 June (Fig. 2).

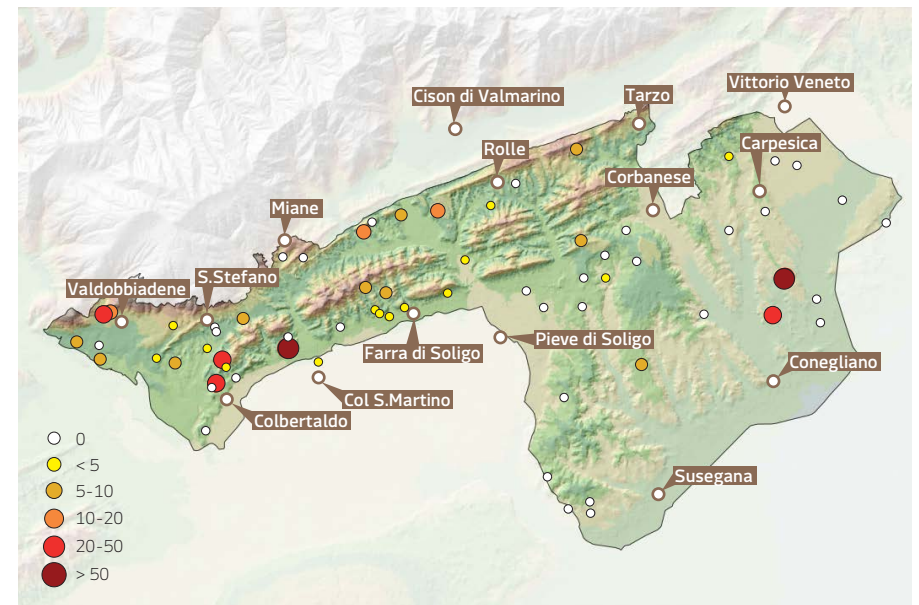


Fig. 2 – Distribution of the vineyards in which the monitoring of the juvenile stages of *Scaphoideus titanus* was carried out, **June 2020**. The size and colour of the dots indicate the number of individuals recorded (see legend).

The checks revealed the presence of early nymphs in almost all the vineyards, while there was an irregular presence of third nymphal stages.

The capturing of these individuals was divided into the 6 classes shown in the legend: white colour 0 individuals recorded, light yellow colour less than 5, dark yellow between 5 and 10, orange between 11 and 20, light red between 21 and 50 and dark red more than 50.

In the second week of June, the number of third nymphal stages increased significantly. This developmental stage precedes fourth and fifth nymphal stages, which are able to transmit the phytoplasma.

Based on these observations, in the 15th Agronomic Bulletin of 16 June 2020, the Consorzio technical team laid out the dates for insecticide treatment application. The chosen timeframe was 19-23 June.

In 2019 the recommended treatment period had been towards the end of June, while in 2018 it had been in the middle of June, in line with 2020.

The data show how a milder spring (as in 2018 and 2020) leads to the insect generation developing slightly earlier.

In the second phase of monitoring, yellow chromotropic traps were used in order to quantify the presence of adults and, consequently, to evaluate the application of a further insecticide intervention. Traps are needed because winged adults are mobile than juveniles within vineyards.

Traps (generally 2 per vineyard) were installed on 76 equally distributed vineyards within the appellation on 2 July. These were replaced two weeks later on 16 July, and finally removed at the beginning of August.

From the data that emerged in *figure 3*, one notes that during the first phase of trap collection on July 16, no adults had been caught in almost any of the monitored sites, with the exception of 3 traps within which there were 1 adult each. On the basis of these values, it was not considered appropriate to recommend further insecticide treatments.



Fig. 3 – Distribution of vineyards in which the monitoring of adult *Scaphoideus titanus* was carried out, **July 2020**. The size and colour of the dots indicate the number of adults captured on traps (see legend).

The second collection, which took place at the beginning of August, showed a slight increase in captures: out of 76 plots checked, 31 had traps with adults inside. The evaluation of whether to carry out a second insecticide treatment only took into consideration those traps with more than 5 individuals inside which, as reported in the table below (Tab. 1) accounted for 5 out of 31; while the rest had only 1 adult inside.

<i>Scaphoides titanus</i>						
N° Individuals/trap	0	< 5	5-10	11-20	21-50	> 50
N° of traps on 16-Jul	73	3	0	0	0	0
N° of traps on 04-Aug	15	26	3	1	0	1

Tab. 1 – *Scaphoideus titanus* adults detected on chromotropic traps on **16 July** and **4 August 2020**.

In general, by comparing the data with those of the previous vintage, one can see how the situation has changed, with vectors being found in traps in 85% of the vineyards monitored in 2019 (57 out of 67) in contrast to 40% in 2020 (31 out of 76). The difference is even more evident if one considers the total insects captured: in 2019 there were 4344, while in 2020 there were only 350.

Figure 4 shows the capturing carried out on the same plots for the last two years: 2019 in blue and 2020 in orange.

The traps are placed in the same vineyard in order to render the collected sets of data comparable one with the other, on the basis of a single variable: the vintage. It is evident that the traps which had a high number of captures in 2019, usually greater than 5, had much lower numbers or without captures in 2020. Out of a total of 28 traps placed in the same vineyard, all of them contained adults in 2019, while in 2020 more than half of these, or 15 out 28, resulted without adults. At a closer look, 1858 specimens were captured in 2019, and 71 in 2020.

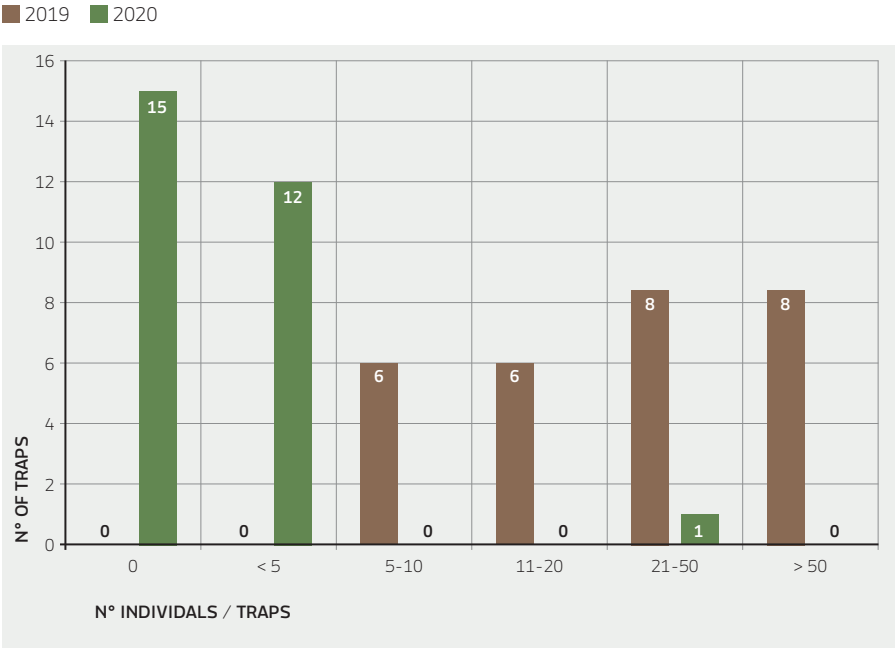


Fig. 4 – Comparison of adult *Scaphoideus titanus* caught in 2019 and 2020.

Considering the total data, one can see how in 2020 *Scaphoideus titanus* captured were reduced compared to 2019; however, this does not equate to a decrease in symptomatic plants for that vintage, since the latter derive from infections that had occurred in preceding years.

In recent years, and especially in 2019, there has been a resurgence of symptoms in vineyards, which has led each individual winegrower following this disease more carefully; in particular, with regards to the carrying out of insecticide treatments which, as confirmed by the data that emerged in that vintage, were more effective. One must, however, continue to follow such developments very closely in future so as to contain this disease as much as possible.

Here follow the agronomic practices that are by now common practice, which permit the increasingly effective control of vectors.

Considering that the disease is transmitted by the insects only after feeding on infected plants, as a precaution it is good practice during the vintage to grub up these plants as soon as symptoms appear.

From an operational point of view, during insecticide treatment, high volumes of water must be used to cover the entire vegetative wall, and all available nozzles must be opened to the full in order to wet the existing shoots well. This phase can further benefit from the correct agronomic management of both the vegetative wall and the turf according to healthy practices such as: not fertilizing excessively, the carrying out of “scacchiatura” pruning, and mowing the grass a few days before insecticide intervention.

And last but not least, it is important to coordinate applications so that treatments are carried out in the same area within brief periods of each other, in this way limiting the appearance of sheltered areas that the insects may repopulate, all the more reason why collaboration between winemakers is crucial to this phase.

VINE MOTHS

Two lepidopteran species coexist within the Denomination:

- *Lobesia botrana*, or grapevine moth
- *Eupoecilia ambiguella*, or vine moth

Both species behave similarly within the vineyard and can cause damage to production both directly, through grape erosion, and indirectly by creating openings in the grapes through which other pathogens, such as *Botrytis cinerea* and/or black rot, may enter.

Like previous vintages, in 2020 the monitoring of these two moths was carried out in 9 stations located within the territory, and with the aid of pheromone traps in order to evaluate flight dynamics, data which is used to establish the positioning of insecticide treatments according to their function: ovicidal, larvicidal, or knock-down effect.

The traps were set on 8 April and were checked on a weekly basis until around 25 August. The two species have similar flight behaviour and produce several generations throughout the year; specifically, the vine moth produces 2-3 generations per year, while the grapevine moth may produce 4 in certain areas.

Pupae overwinter under the bark. Adults emerge in April and the first flight lasts about a month. It is followed by a second flight from mid-June to July, and in August, there may be a further flight. The flight dynamics may vary from vintage to vintage according to meteorological trends.

→ *Lobesia botrana*

Figure 5 shows the flight dynamics of *Lobesia botrana* adults within the Denomination, which has been divided into the slightly colder northwest area and the southeast area, which is characterized by a milder climate. It is clear how climatic conditions influence the activity of this pest.

The first individuals to be caught were recorded around 9 April in both areas, and this continued into the middle of May in the more temperate zone and almost until the end of the month for the slightly colder zone.

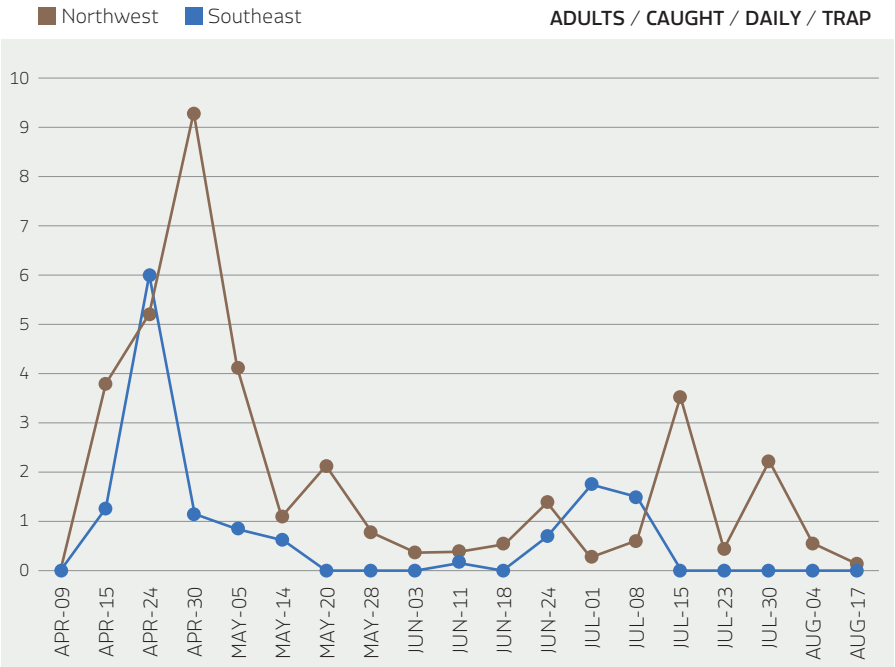


Fig. 5 – Comparison between the southeast and northwest areas regarding the average number of *Lobesia botrana* captures during the 2020 season.

By comparing these data with the 2019 vintage, when flights began in the first ten days of May, it is clear how sunny weather conditions in the months of April and May not only hasten the development of the insect, but also favour its activity, which may be protracted over long periods of time. On the contrary, high temperatures during the summer period of July and August may limit activity.

The second flight started in late June. In eastern area, this flight was completed in mid-July, while it was prolonged until the first days of August in the west.

The abovementioned data, which represents specimens caught continuously over an extended period of 67 days, highlights how the flights of the second and third generation of insects overlap.

The area’s optimal climatic conditions enabled the insect to prolong its development.

Unlike the first generation which is anthophagous – an insect that feeds on flowers –, the next generations are carpophagous and feed on grapes, and thus are more harmful. During the 2020 season, a specific insecticide application against berry moths was not deemed necessary due to low captures.

→ *Eupoecilia ambiguella*

Figure 6 shows how the vine moth flight pattern is almost exactly the same as that of the grapevine moth, and also confirms greater activity in the northwest area in cooler weather conditions, especially in summer.

The first flight started in early April and was completed in mid-May, while the second flight began around 20 June and was completed in about 35 days.

Unlike 2019 in which, across most of the monitoring sites, almost no adults were caught, in 2020 two flights were detected. The average number of adults caught daily per trap, albeit higher during the second flight, did not reach figures to require ad hoc insecticide applications.

In conclusion, we can confirm that the two lepidopters coexist within the territory of the Denomination, and that in 2020 there was a greater presence of them than in previous vintages.

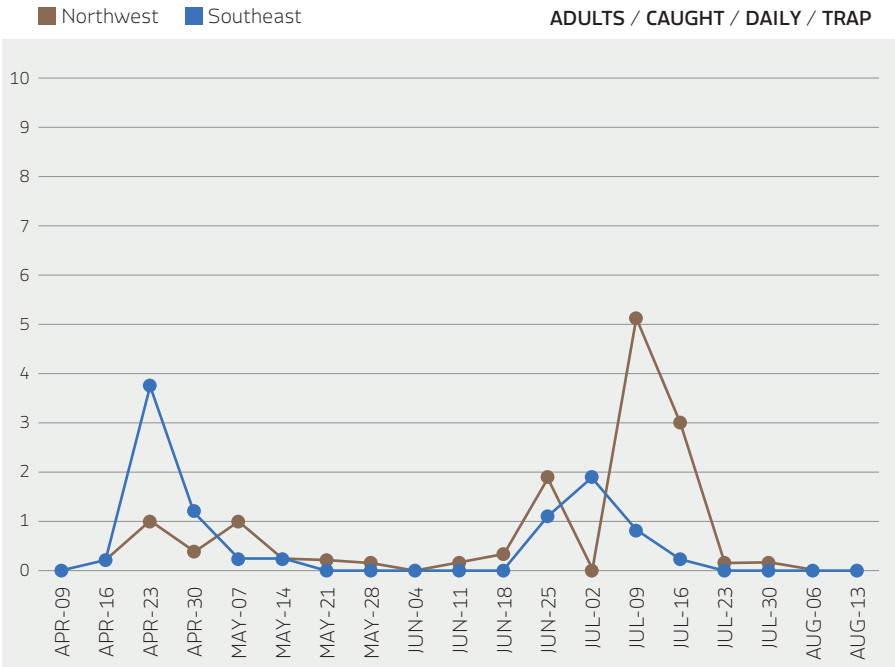


Fig. 6 – Comparison between the southeast and northwest areas regarding the average number of *Eupoecilia ambiguella* captures during the 2020 season.

From the monitoring carried out in the field, some damage to the grape bunches – albeit limited – was recorded, especially towards the middle of August, and particularly in the areas where the two generations of grapevine moth overlapped. The damage did not exceed 5% of the affected bunches; while there were 1 or 2 nests on the single bunch.

Due to the heavy rains at the end of August in particular, these attacks favoured the development of botrytis on the grapes that had been damaged by vine moths; but as already reported, the monitoring did not reveal any major damage both quantitatively and qualitatively.

MATING DISRUPTION

Mating disruption is an effective technique for containing vine moths: it does not require the use of chemicals and is particularly suited to cases in which insecticides are less effective due to resistance. It may be applied over large surfaces, or even better, at district level.

For the third consecutive year, the Consorzio has financed a project that includes 6 monitoring stations, covering a total area of 60ha, in which this technique is used in order to promote a more environmentally sustainable phytophagous control system.

By the end of March Isonet *LE diffusers*, manufactured by Shin-Etsu and distributed by CBC Biogard, had been positioned in the various sites (about 500 diffusers/ha).

During the season various monitoring activities were carried out to assess the possible presence of damage due to vine moths, the checks were carried out as follows:

- **26 May** 1st generation larvae count
- **29 June** 2nd generation egg count
- **13 July** 2nd generation larvae count
- **8 September** 3rd generation larvae count

During the checks, 150 bunches per vineyard were observed, distributed in different positions on the canopy. The data collected regarding the vintage are as follows:

- **26 May** out of 6 sites with attacks: 2 sites with 1% inflorescences affected, 2 sites with 2% inflorescences affected
- **29 June** no sites showed signs of attack
- **13 July** no sites showed signs of attack
- **8 September** larvae present in 4 out of 6 sites: 2 sites with 1% of bunches affected, the other 2 with 3% and 10% of bunches affected, respectively.

Analysing the data collected, it is possible to note how the considerable activity of the first generation of vine moths led to attacks on the inflorescences in 4 out of 6 sites with limited percentages of damage – no more than 2% of bunches affected – values that are in line with the numbers of previous years.

On the other hand, there is a slight difference as regards the count of 2nd and 3rd generation larvae due to the fact that the flights overlapped, resulting in high phytophagous activity in the vineyard in the same period. The results of the monitoring in July did not reveal the presence of bunches affected by the 2nd generation larvae; while the last check in September revealed the presence of 3rd generation larvae in 4 out of 6 sites with low damage rates, except for one site where 10% of the bunches were affected.

On the aforementioned site, despite fairly high levels of damage (10-12% of the bunches affected), it was decided, with the harvest imminent at that point, not to carry out a specific insecticide treatment in order to avoid possible residues on the grapes.

Overall, considering these three vintages of field experimentation, the validity of mating disruption as a technique for containing vine moths can be confirmed, in particular because it avoids the use of chemical applications.

In any case, it is essential to monitor the vineyard in crucial periods of the year in order to evaluate the results of applying this technique, considering that the climatic variability of the individual vintages strongly affects the behaviour of these lepidoptera.

CHAPTER 06
The Ripening of the Grapes

edit by **Marta Battistella**
Consortium for the Protection of Conegliano Valdobbiadene Prosecco DOCG

For a number of years, the Consorzio di Tutela Conegliano Valdobbiadene Prosecco Superiore has been monitoring the ripening of Glera grapes in 20 evenly distributed reference points within the Denomination.

The previous chapters highlighted the peculiarities of the 2020 vintage, which started substantially earlier than in past vintages, but slowed down during the summer period due to cold temperatures – in some cases below average for the period – and consistent rainfall.

Data collection for 2020 began on 11 August, when most of the vineyards had entered a phenological phase between 50% and 75% veraison; as visible in the table below, the starting date is in line with the 2017 vintage.

Year	2020	2019	2018	2017
Sampling start	11 August	19 August	6 August	9 August

As usual, sampling was carried out on a weekly basis up to 15 September, totalling 6 samples (about 1 month of monitoring in total). During the last sampling, most of the vineyards located in the traditionally warmer and more advanced area in the east of the Denomination were already ripen, and therefore had already been harvested.

Moving to the description of the data, *figure 1* describes the trend of sugar accumulation and the titratable acidity for the 2020 vintage, in comparison with the historical average trend of the same two parameters. The evolution of these two indices has been considered in relation to the Winkler index (also known as growing degree days) regarding the different sampling dates in the different years.

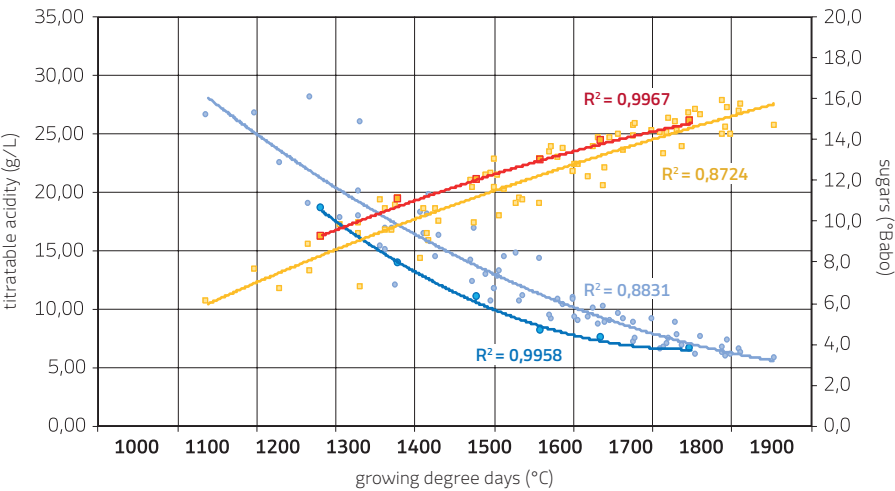


Fig. 6 – Average evolution of sugars (redline) and titratable acidity (dark blue line) for the year 2020 compared with the historical average trend 1997-2019 (yellow line and blue line), in relation to the growing degree days parameter.

As already mentioned in previous editions, the bibliographical data indicate that the Glera variety requires to reach 1700 growing degree days in order to ripen.

From the graph it is easy to deduce the different analytical framework relating to the ripening phase in 2020 compared to historical data. We can see how the sugar trend (the red line in the graph) remains above the historical reference trend (yellow line in the graph); as opposite, the trend of titratable acidity in 2020 (highlighted with the dark blue line in the graph) remains well below the historical line (light blue line in the graph) for most of the period, realigning itself only in the last phase of ripening.

The graph shows how with the same growing degree days, in 2020 the grapes showed a greater sugar accumulation and an advanced degradation of organic acids compared to the historical data.

Analysing in detail the curve relating to sugar accumulation, it starts with 9° Babo (about 1280 °C) and ends with 15° Babo (about 1750 °C); as regards the titratable acidity, on the other hand, it starts with a value of 18 g/l and ends with a value of 6 g/l.

It may be of interest to compare what occurred in the 2019 vintage, which was characterized by an initial “gap” that closed however during ripening.

In the last year, the sugar accumulation and acidity degradation trends were characterized by a “steeper” curve that allowed to “overcome” the historical reference values at the end of the harvest.

This was possible thanks to the particularly favourable conditions that occurred from mid-August and continued throughout the month of September, with substantially stable weather with not excessive temperatures and good water availability; conditions that did not occur in 2020.

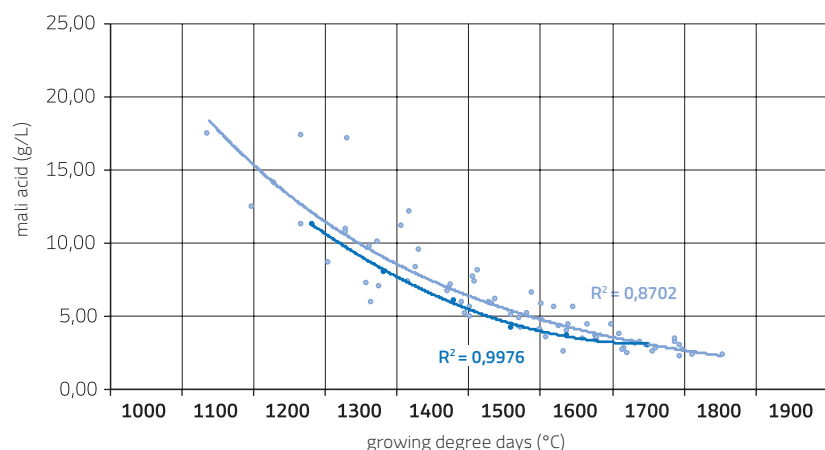


Fig. 6 – The average decrease of malic acid in Glera grapes in the 2020 vintage (dark blue line) compared to the historical trend 1997-2019 (light blue line), in relation to the growing degree days parameter.

What highlighted by the analysis of the data of titratable acidity and the accumulation of sugars, is also confirmed in *figure 2*, which shows the trend of malic acid in 2020 compared to the referential historical average 1997-2019. One can see from the graph, that the accumulation of malic acid in 2020 (dark blue line) appears to be positioned below the historical reference line (light blue line).

Only at the end of the ripening process, as previously analysed in the titratable acidity trend, there is a slowing down in the degradation that allows for a substantial realignment with historical values.

It is clear that the malic acid has degraded to lower growing degree days than in previous years: it starts with an initial value of about 12 g/l of malic acid (about 1280 °C) and ends with a value of 3 g/l (1750 °C).

As regards the description of geographical distribution of the ripening data, the maps in *figure 3* and *figure 4* show the territorial variability of the sugar accumulation on two different dates (25 August 2020 and 1 September 2020).

The sugar accumulation on 25 August 2020 was quite variable within the Denomination, as is clearly seen in *figure 3*. In particular, the towns of Rolle, Col S. Martino, Colbertaldo, Miane and Santo Stefano were not very advanced in terms of ripening (around 10 °Babo), confirming once again this area’s status as the coolest of the Conegliano Valdobbiadene wine-growing territory.

As follows are the towns of Valdobbiadene, Farra di Soligo, Tarzo, Colle Umberto, and Pieve di Soligo. The area that extends between the municipalities of San Pietro di Feletto, Vittorio Veneto, Conegliano and Susegana is traditionally warmer and shows more advanced ripening (between 12° and 13° Babo).

On 1 September the same difference between zones in terms of grape ripeness is evident, even if less clear, as shown in *figure 4*.

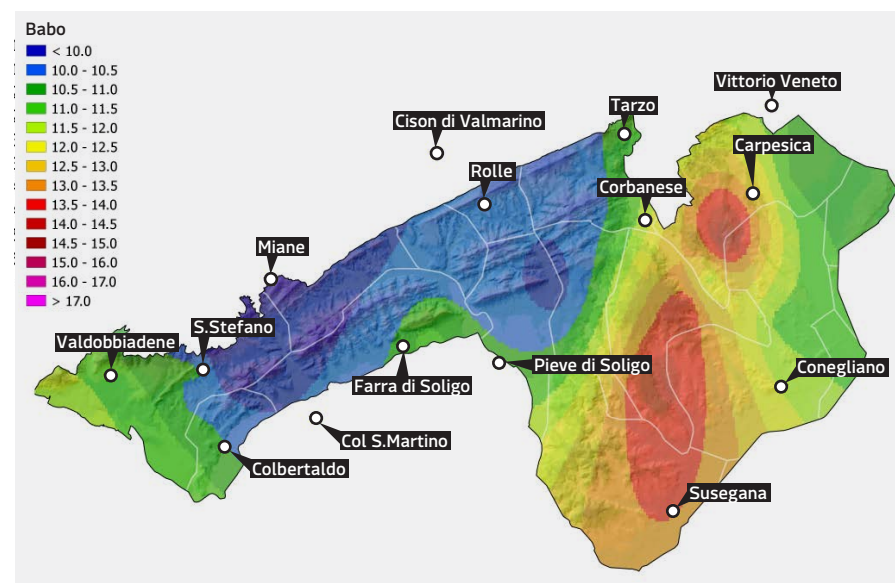


Fig. 3 – Sugar accumulation (° Babo) - Grapes of the territory of the Denomination - 25/08/2020

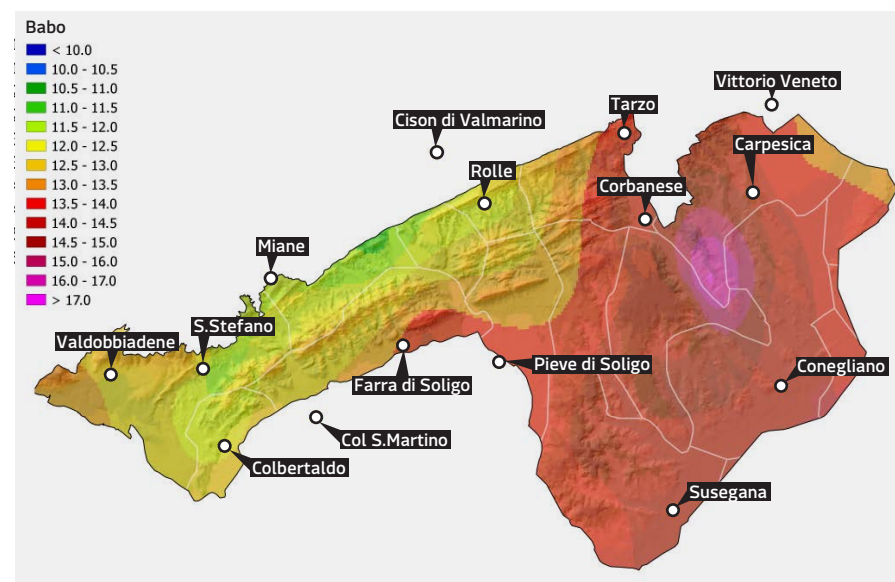


Fig. 4 – Sugar accumulation (° Babo) - Grapes of the territory of the Denomination - 01/09/2020

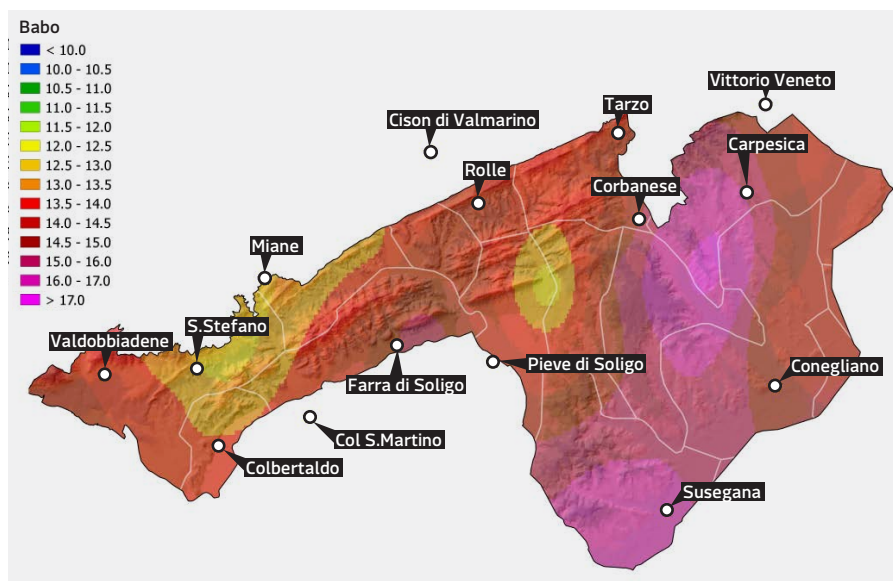


Fig. 5 – Sugar accumulation (°Babo) - Grapes of the territory of the Denomination - 7/09/2020

The map in *figure 5*, again related to the accumulation of sugar but closer to harvesting (7 September, which was the penultimate sampling date), highlights the permanence of a central strip between Corbanese and San Pietro di Felleto (purple colour on the map) with higher values than the remaining part of the Conegliano Valdobbiadene Denomination (values between 16° and 17° Babo).

The slowness of the ripening process that characterized the 2020 viticultural year, can be seen on the different maps shown; the meteorologically unstable conditions (rains and consequently cool temperatures for the period) that occurred at the end of the summer (late August-early September) did not allow the vine to accelerate the ripening of the grapes, as shown by the graphs that correlate the main ripeness indicator and growing degree days.

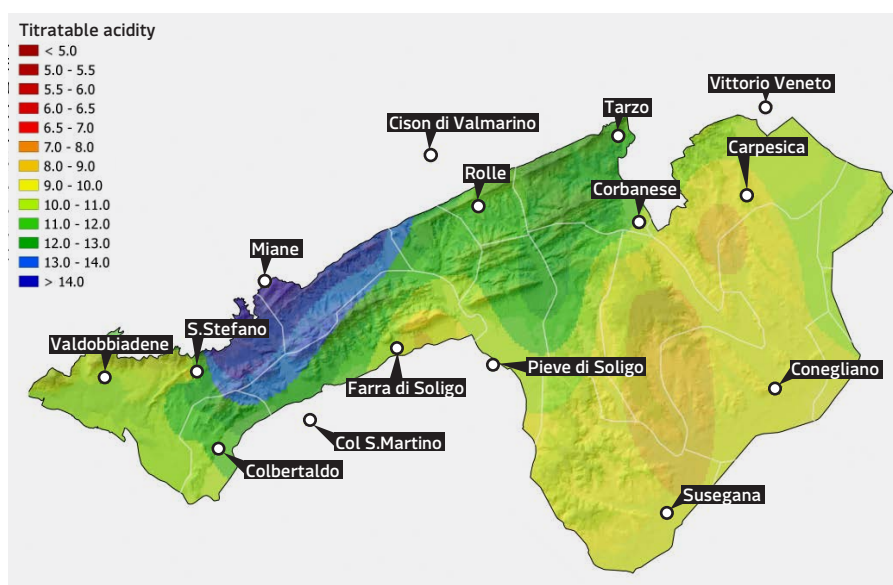


Fig. 6 – Titratable acidity (g/l) - Grapes of the territory of the Denomination - 25/08/2020

With regard to titratable acidity, *figure 6* shows the situation in the territory on 25 August, in which one can highlight some similarities with what was seen on the same date regarding sugars. The towns of Santo Stefano, Miane and Colbertaldo were by far the latest, with acidity values of between 11 and 12 g/l.

However, the area between the towns of Corbanese, San Pietro di Felleto and Susegana was advanced in ripening, with substantially lower acidity values (8-9 g/l).

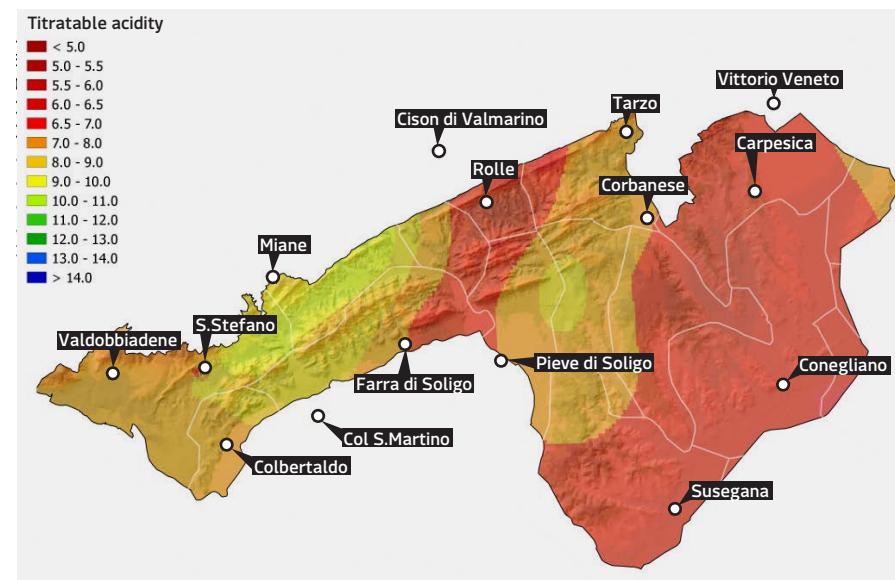


Fig. 7 – Titratable acidity (g/l) - Grapes of the territory of the Denomination - 7/09/2020

After about fifteen days, on 7 September (Fig. 7), the situation has evolved significantly in the different areas of the Denomination, maintaining however the differences between the various areas (as per tradition, the Valdobbiadene area was significantly late).

Figure 8 shows the distribution of malic acid in the territory of the Denomination on 1 September. Once again there are strong similarities with what has been described regarding titratable acidity: the central area between Corbanese and Susegana shows more advanced ripening, with more intense malic degradation (values between 2 and 3 g/l). On 7 September (the penultimate sampling) the situation had generally become more homogeneous, even if there was still a difference in the levels of the east and west areas.

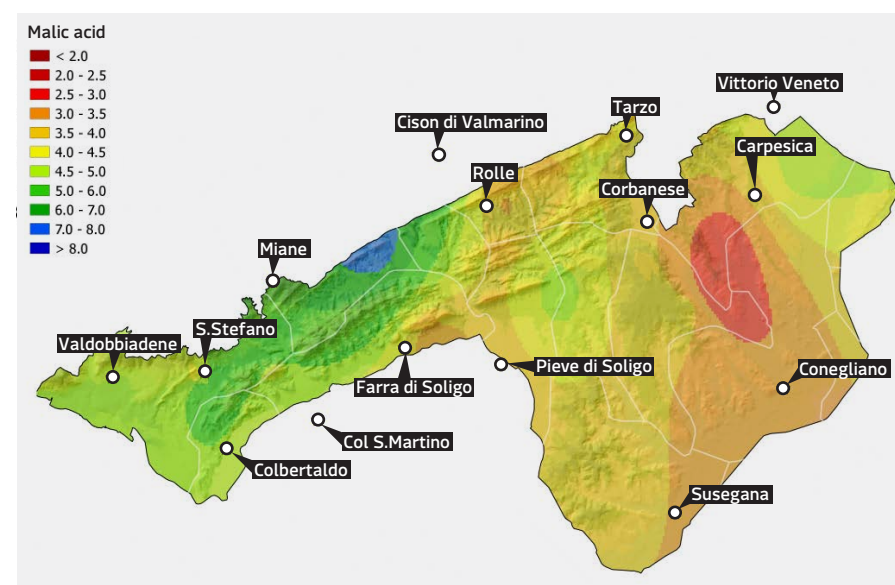


Fig. 8 – Malic acid (g/l) concentration - Grapes of the territory of the Denomination - 1/09/2020



CHAPTER 07

Berry Tasting

edit by **Roberto Merlo**
Uva Sapiens S.r.l.

Berry tasting is a method that allows one to understand and to quantify the organoleptic quality of grapes before harvesting, and that enhances visual and flavour parameters that would be lost in strictly chemical-technological analyses. This technique involves the collection of a representative sample of grape bunch portions from the field. In the DOCG area there are 20 territorial reference vineyards, which were selected to be representative of the whole area, from the northwest to the southeast. This activity is carried out on a weekly basis from mid-August up to the harvest.

The work protocol that coordinates this *“modus operandi”* was codified by the Institut Coopératif de la Vigne et du Vin of Montpellier and includes a list of descriptors that analyse all the components of a grape in detail (Tab. 1).

There are four macro categories that are examined: **the berries, the flesh, the skin and the seeds**. Regarding the berries, the following descriptors are considered: mechanical firmness, colour and resistance to detachment from pedicel. The following characteristics are evaluated when examining the flesh: skin-flesh separation, sweetness, acidity, herbaceous and fruity flavour. Regarding the skin, the following descriptors are analysed: predisposition for crushing, tannic intensity, acidity, astringency, herbaceous and fruity flavour. Grape seeds descriptors are the last parameters taken into consideration.

Regarding these, tasting is difficult due to their general *“crudeness”* and high levels of astringency; since seed degustation would affect subsequent tastings, initially only visual assessment is carried out.

It is preferable to carry out a complete sensorial analysis closer to the harvest, when the grape seeds are progressively more advanced in ripening and allows one to appreciate a range of different notes.

The **20 reference vineyards** where samples are taken fall within all of the DOCG municipalities.

During the 2019/2020 vintage, **5 tastings** were held: on 18 and 25 August, followed by 1, 7 and 15 September. As already mentioned, the weekly frequency is an important time-frame to allow an objective monitoring of the evolution of the Glera in all its nuances.

Considering the pedoclimatic characteristics of the milder and cooler areas, which reflect well established differences in grape ripening, we divided the appellation area into two zones:

- **Zone A** – Southeast (Conegliano area)
- **Zone B** – Northwest (Valdobbiadene area)

Tab. 1 – GRAPE TASTING – Descriptor Table

Grape examination	1	2	3	4
Mechanical consistency of grapes	hard grape, splits only under high pressure	grape is slightly deformed under pressure but resumes its initial shape	grape is easily deformed, slow to regain its initial shape	soft grape, splits easily under slight pressure
Colour <small>(pedicel side for reds)</small>	pink, light red green	red green/yellow	dark red straw yellow	black amber yellow
Predisposition for detachment	pedicel not at all easily detachable, skin tears when removing	pedicel not easily detachable, part of the pulp remains attached when removing	pedicel easily detachable, some non-coloured pulp remains attached when removing	pedicel detaches very easily, with little pulp, red colour (red grapes)

Pulp examination	1	2	3	4
Skin-pulp separation	pulp not at all easily detachable from the skin and grape seed	visible layer of pulp sticking to the skin	thin, barely visible layer of pulp, juice is released when chewed	no pulp attached to the skin, no juice is released when chewed
Sweetness	slight sweet pulp	medium sweet pulp	sweet pulp	very sweet pulp
Acidity	very acidic pulp	acidic pulp	medium acidic pulp	slightly acidic pulp
Herbaceousness	very strong	strong	weak	absent
Fruitiness	absent	weak	strong	strong fruit preserve

Skin examination	1	2	3	4
Predisposition for crushing	very difficult to chew, only splits with the 4th/5th bite, oarse fragments	difficult to chew, only splits wit the 2nd/3rd bite, small fragments	fairly difficult to chew, splits fairly soon, an almost homogeneous pulp	very easy to chew, splits instantly, homogeneous pulp
Tannic intensity	tongue slides with great difficulty, medium to strong tannic sensation from beginning to end of chewing	tongue slides with difficulty, medium to strong tannic sensation for more than half of chewing time	tongue sticks lightly to the palate, light to medium tannic sensation for a short period of time	tongue slides effortlessly, no tannic sensation for the duration of chewing
Acidity	very acidic skin	acidic skin	medium acidic skin	slightly acidic skin
Astringency	strong burning sensation on the tongue, locally anesthetized palate, difficulty in resalivating the mouth for more than 10 seconds	fairly strong burning sensation for some time after chewing, difficulty in resalivating the mouth for 5-10 seconds	slight burning sensation for a few seconds after chewing, little difficulty in resalivating the mouth	no burning sensation, no difficulty in resalivating the mouth
Herbaceousness	strong herbaceous sensation for the duration of chewing	medium to strong herbaceous sensation for a good part of chewing	mild to medium herbaceous sensation for a short part of chewing	absence for the duration of chewing
Fruitiness	absence for the duration of chewing	mild to medium fruity sensation for a short part of chewing	medium to strong fruity sensation for a good part of chewing	strong fruity sensation (fruit preserve) for the duration of chewing

Grape seed examination	1	2	3	4
Colour	white, yellow/green	brown/green	black-brown/grey	dark brown
Predisposition for crushing	soft integument, crushed under high pressure applied by incisors	fine integument, "humid" seeds that are crushed under high pressure applied by incisors	almost no integument, har, slightly crunchy seeds	no integument, crunch easily
Astringency	very astringent even at the slighes taste	very astringent once chewing begins	astringent when chewed	not astringent
Aromas	cannot be tasted, vegetal traces	herbaceous, vegetal	neutral or grilled tones	roasted
Tannic intensity	tongue slides with great difficulty	tongue slides with difficulty	tongue sticks lightly to the palate	tongue slides effortlessly over the palate

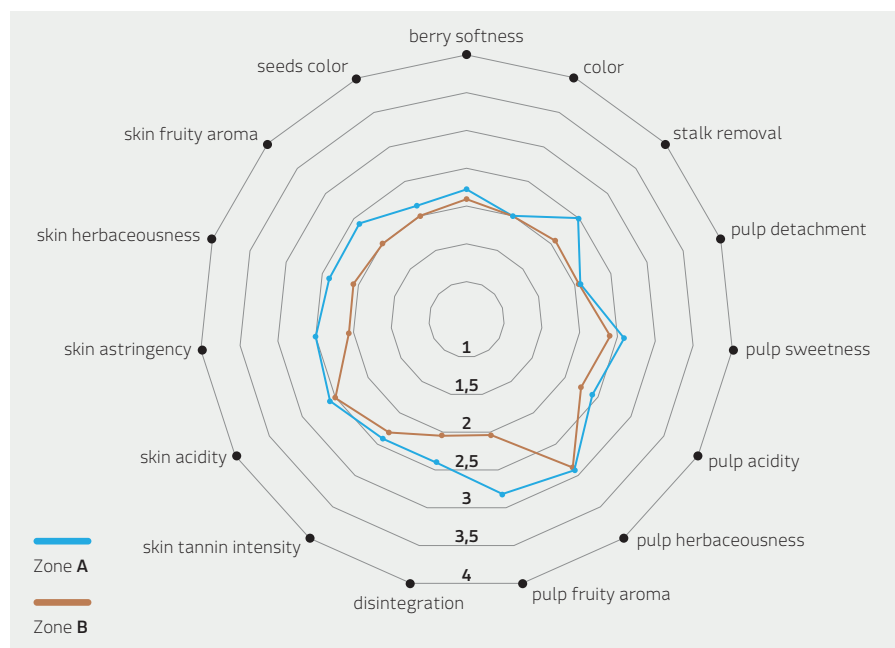


Fig. 1 – Berry tasting, 2020 harvest: average values of Zone A and Zone B

Figure 1 reports the last pre-harvest tasting on 7 September (note that by 15 September most of the vineyards in the southeast area had already been harvested) and was built considering the average values of descriptors for all collected samples (Tab. 1).

The reference scale ranges from 1 (unripe grapes) to 4 (overripe grapes). The results of the tasting confirm that, even in the 2020 vintage, zone B is on average less ripe than Zone A. There are 4 values that mark this difference, once relate to the analysis of the flesh and three to that of the skin.

The descriptor “fruity flavour” in the flesh shows an average value of 2.80 for the Conegliano area and 2.08 for the Valdobbiadene area, a difference that is expressed through the former’s stronger and the latter’s weaker intensity of flavour, respectively.

However, the fruity flavour of the skin reports values of 2.4 and 2.1. Astringency, greater or lesser perception of burning on the tongue while tasting the skin, shows values of 2.5 and 2.17 for the warmest and the cooler and milder areas, respectively.

Predisposition for crushing reveals values of 2.4 in Zone A – outlining a thinner skin – and a slightly thicker skin of 2.1 in Zone B. Finally, as regard the skin, the presence of a vegetal, herbaceous flavour when chewed is recorded as 2.4 in the first case and 2.17 in the second case, further confirmation of the presence of two different microclimates within the territory.

ZONE	MUNICIPALITIES	YEAR	PARAMETER	VALUE
A	Refrontolo	2015	pulp herbaceousness	4
A	Rua di Feletto	2019	pulp herbaceousness	4
A	Rua di Feletto	2019	skin tannin intensity	4
A	Rua di Feletto	2016	skin acidity	4
A	Carpesica	2018	skin acidity	4
A	Rua di Feletto	2019	skin acidity	4
A	Rua di Feletto	2019	skin astringency	4

Tab. 2 – Maximum value (4) reached in the municipalities of Zone A, reference parameters

Examining figure 2, one notes the grey line representing the maximum value recorded in the tasting of each individual parameter considering all the historical data available (2015/2019).

The figure shows how, upon the last tasting before the harvest for each year between 2015 and 2019, the maximum number obtained in the scale was 3 for all parameters except: flesh herbaceousness, tannic intensity, skin acidity and astringency, which instead showed a value of 4, as shown in table 2.

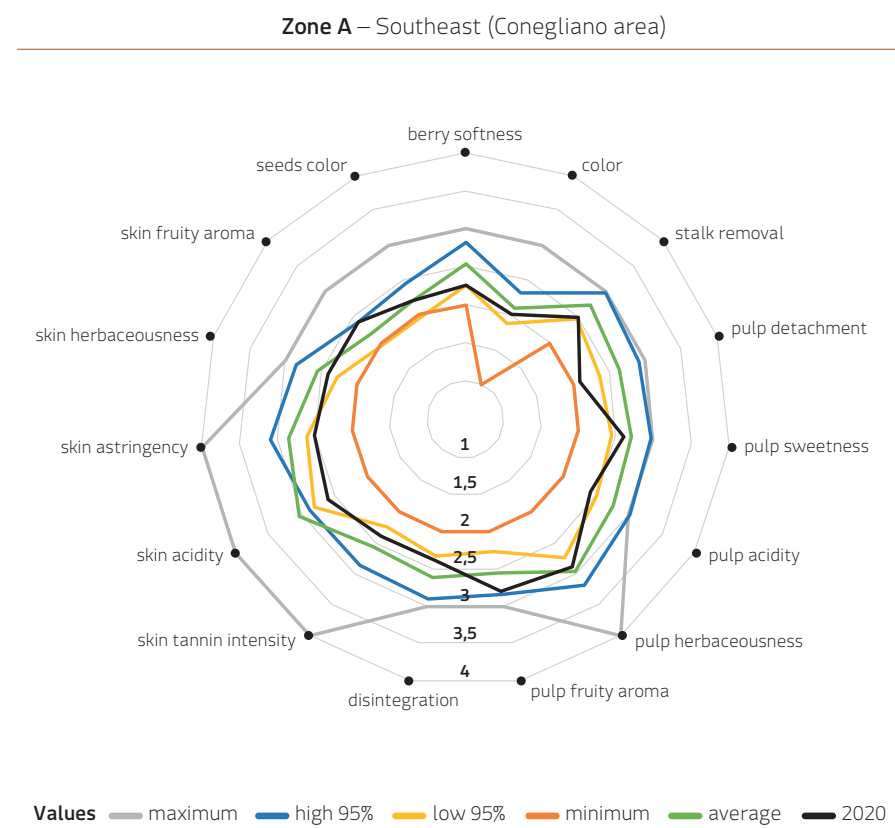


Fig. 2 – Berry tasting, 2015/2020 harvests – Zone A (Conegliano area)

On the other hand, the absolute lowest value among all the parameters listed in the table of descriptors (Tab. 1), was shown in the Tarzo sampling regarding “the colour of the berry” which, on September 6 2017, evidenced a value of 1 on a scale ranging from 1 (green) to 4 (amber yellow) (see figure 2, orange line).

The blue and yellow lines on the graph (Fig. 2) represent the high 95th and low 95th percentiles respectively; these two functions contain 95% of the data, and this exclude both maximum and minimum excesses.

The grape ripeness values relating to the single vintage will approach the values of the high 95th percentile when ideal weather conditions occur throughout the season, as opposed to the low percentile when the climate is less favourable.

The black line represents the 2020 vintage; it is quite uniform regarding the skin analysis parameters, ranging between 2.4 and 2.6. However, regarding the flesh it is more variable with oscillations between 2.1 and 2.8.

Comparing these data with the historical averages of the different vintages (green line) one observes that in almost all the parameters, 2020 records lower values: the different component of grape maturity did not show any significant changes over the course of the tastings, revealing a lag of ripening.

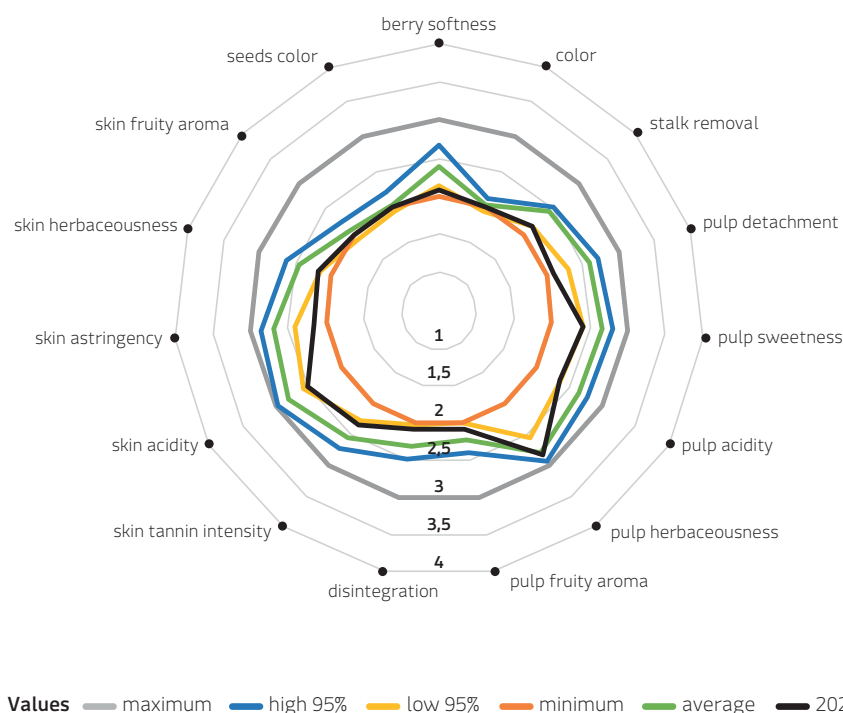


Fig. 3 – Berry tasting, 2015/2020 harvests - Zona B – Northwest (Valdobbiadene area)

In this case, for all the parameters considered, the maximum values topped at 3 and the minimums at 2, resulting in a substantial compacting of the various curves.

The high 95th percentile function substantially follows the average trends of each individual parameter for the years considered (2015/2019), while as regards the low 95th percentile (yellow line), the function even overlaps the minimum one (orange line), the average (green line) and 2020 (black line) for different parameters (skin fruitiness, colour of grape seeds and colour of the grape).

For the year 2020 (black line), with the exception of the three parameters mentioned above, almost all the others overlap the yellow line of the low 95th percentile, being below the historical average (Fig. 3 - green line), confirming the suggestion of a vintage characterized by greater freshness of the grapes.

The Viticultural Protocol and S.Q.N.P.I. Certification: the sustainability of the territory

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The Consorzio di Tutela Conegliano Valdobbiadene Prosecco Superiore has always been very attentive to issues concerning sustainability. It has been so in the past and continues to be so in the present through various initiatives, both on a technical and communicative level.

For example, the **Viticultural Protocol**, this year in its tenth edition, is an advanced integrated pest management regulation of a voluntary nature that aims to promote a virtuous approach within the phytosanitary field through the selection of active substances that can be used in viticulture in accordance with rigorous and objective principles.

This document, therefore, exceeds the standards required by current European and national regulations, with respect to which it is substantially more restrictive, with the aim of being a useful tool for reducing the impact that viticulture exerts on the territory of our Denomination, not only from a public health point of view, but more generally in terms of the environment and biodiversity.

The classification of plant protection products in the Viticultural Protocol is not only based on parameters relating to the intrinsic danger of the active substance, but above all on the eco-toxicological profile of commercial preparations, and on the analysis of hazard statement weights within the most common formulations on the market. Preparations, which are not classified as being dangerous for humans, animals, and the aquatic environment, are clearly preferred.

The Viticultural Protocol is subject to annual review, as it refers to Integrated Defence Technical Guidelines that are issued at regional level and is usually published between March and April (before phytosanitary treatments are initiated). The document also contains a range of insight mainly concerning insects and plant diseases.

In 2019, in order to bring about further advancement, the Consorzio di Tutela promoted a project regarding **S.Q.N.P.I. Certification** (National Integrated Production Quality System) for the wine-growing companies of the Conegliano Valdobbiadene Denomination.

Voluntary integrated pest management is a system created through specific technical regulations for each crop and restrictive phytosanitary instructions (production regulations), including agronomic and phytosanitary policies, as well as limitations in the choice of plant protection products and number of treatments.



In operation since 2016, the S.Q.N.P.I. system is applied to all vegetal production (processed and unprocessed) and allows the “little bee” trademark to be displayed on the product subject to certification, obviously after having obtained approval.

The system is also applicable to a single specific farm cultivation (in the case of the Consorzio di Tutela the certification process is applied to wine production vines, for example).

Companies can choose whether to take part in the S.Q.N.P.I. system either individually or as a part of an association. All categories can participate: agricultural producers (in our case wine farmers), the conditioners (in our case bottlers), the processors (in our case winemakers) and distributors, in the case of products sold in bulk.

This year 117 companies are partaking in the S.Q.N.P.I. certification project compared to last year’s 35. This is a clear sign that the entire territory is moving towards the goal of finding a form of environmental sustainability. In order to highlight the project’s relevance, a collaboration was set up with the three main local-level trade associations (Coldiretti, CIA, and Confagricoltura), who helped with subscriptions and with the keeping of certain phytosanitary registers on the LAVIPE-ENOGIS dedicated portal.

In fact, a decision was made to make a single portal available to certification subscribers, within which they could enter the different mandatory information (operators, treatments, cultivation operations, fertilizations, etc.), in order to facilitate subsequent checks by both the associated operator (the Consortium of Protection) and the controlling body (Valoritalia).

The certification system provides for two-tier control aimed at demonstrating the application of regional integrated production regulations in the various stages of production, from the agricultural stage to the final packaging.

- **Self-checks:** this provides for the verification of compliance requirements by operators subscribed to the S.Q.N.P.I. regarding activities carried out on their production sites. The Consortium also carried out multi-residual analyses on 25% of the participating farms, in order to verify the effective use of plant protection products in viticulture. Furthermore, the Consortium is obliged to guarantee documented checks on 100% of member companies to Valoritalia.
- **Checks by controlling bodies** specifically authorized by MIPAAF (Ministry for Agriculture, Food and Forestry Policies). In the case of associated operators, checks on companies are carried out on a random basis (based on the square root of the number of members).

Once certification has been obtained, the wine farm can display the identification logo within its vineyards (on signs), while the winemakers, depending on their form of membership (winemakers, bottlers or distributors), may fix the trademark to the finished product. Finally, all certified users may use the trademark for advertising purposes, on websites, brochures, and social media etc.

S.Q.N.P.I. provides added value both to our product, Conegliano Valdobbiadene Prosecco Superiore, and to our territory; and it is for this reason that we must commit ourselves to adopting and promoting it.



SISTEMA DI QUALITÀ NAZIONALE
PRODUZIONE INTEGRATA

Consorzio di Tutela



PROSECCO SUPERIORE
DAL 1876

**CONSORZIO DI TUTELA
CONEGLIANO VALDOBBIADENE
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