Delinat Guidelines

for Organic Winegrowing, Organic Winemaking and Social Standards

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DELINAT | Consulting

Imprint
These guidelines replace the guidelines of 2019.

The revision for the 2022 Delinat guidelines version has been processed by:

Daniel Wyss, Consultant Delinat-Consulting
Karl Schefer, Delinat

Switzerland
Delinat AG
Davidstrasse 44
CH-9000 St. Gallen

Germany
Delinat GmbH
Rheinallee 27 A
D-79639 Grenzach-Wyhlen

Austria
Delinat GmbH
Postfach 400
A-6961 Wolfurt-Bahnhof

www.delinat.com

«New paths are created by treading them.»

Franz Kafka

The Delinat guidelines have been compiled to support winegrowers in their efforts to operate their vineyards in a regenerative and climate-positive manner and to attain such a high level of biodiversity within their vineyards that the cultures themselves become ecological compensation areas.

The Delinat guidelines not only allow an efficient and understandable monitoring of winegrowers, but also open up ecologically sustainable perspectives for future winegrowing. By using the specific methods to achieve greater biodiversity, the quality of Delinat wines can be further improved, the ecosystem stabilised in the long term and production costs reduced.

The aim is to create the most efficient, small-scale, diverse and closed circuits possible. The soils should be regenerated and humus should be built up, also in order to improve the water supply and to achieve a positive climate balance. Concepts from permaculture, agroecology, holistic pasture management and agroforestry help to achieve these goals.

The Delinat guidelines are being improved all the time and revised annually. Suggestions we receive from winegrowers and consumers are recorded, examined, and tested (Chapter 4) and, when useful, included in the guidelines.

The aromatic diversity and harmony of the wines, achieved by implementing these guidelines, is the best argument in favour of our basic principle:

Working with and not against nature.

The purpose of the Delinat guidelines

From time to time vintners come to Delinat with questions and requests concerning individual provisions of the Delinat guidelines. It is completely normal and understandable for Delinat that points that are difficult to grasp and seem to be of little help from the point of view of the vintner are questioned. Vintners in rainy regions would like more tolerance for copper limits, sweet wine producers more generous SO2 limits, friends of purebred yeast no sanctioning over spontaneous fermentation. Most policy items are considered important and correct by all vintners, although opinions sometimes differ.

The Delinat guidelines were born out of the need to give wine consumers a clear answer to the many questions surrounding wine. The guidelines are a synthesis of customer concerns and technical feasibility. The aim was to create a quality label for wines that meet the highest ecological and quality standards. Customers who place their trust in this label are looking for quality and dependability, and want to make their consumption sustainable.

It is therefore important that all Delinat wines meet the same standards and at a high level in all criteria that are decisive for wine connoisseurs. Customers are not particularly interested in the fact that mildew is a bigger problem in Bordeaux than in southern Spain. The wine connoisseurs do not care that some varieties of acid are missing, so that the SO2 limits cannot be met. Important for consumers is only that one can rely on the limits.

In some winegrowing regions, it is technically not possible to comply with the Delinat guidelines with "normal" vines. Only fungus-resistant varieties (PIWIs) can withstand the diseases here. The choice of suitable grape varieties is generally important - only in very few regions can sensitive varieties be managed sustainably. There is a limit for Delinat: deliberately avoiding susceptible varieties in difficult climates, because that is just not sustainable. Even if the sprays carry a bio-certificate, it is not ecological to spray against powdery mildew 15 times a year. This compacts the soil, damages flora, insects and microorganisms, and consumes enormous energy. The vines are artificially kept alive, like drip-feeding the seriously ill.

The Delinat guidelines are the "guarantee certificate" for Delinat customers. They set themselves apart from all other standards, are clearer, more detailed, more binding, stricter and demand and promote high quality. The growing number of loyal customers and the sustained success of long-time Delinat vintners speak for the concept, and set the direction for further development: The Delinat guidelines become more sophisticated and demanding as experience and critical results from research and practice grow. Delinat vintners are becoming more and more the elite in viticulture. They are the lighthouses in the vast ocean of wine monocultures.

Delinat supports Vintners whose region and varieties have potential, who are motivated to develop further with Delinat and who are tirelessly seeking better solutions. Firstly with technical advice, and secondly with reliable acceptance at fair prices. Even big obstacles can be overcome together. The prerequisite is the will to maximize quality, uncompromising sustainability and trust in the partnership.

Cultivation

1. Preparing the soil and using fertilisers

1.1 Cover crops for vineyards

Objective

To have the whole vineyard or a maximum partial area of it covered with a wide variety of green crops the whole year round. Carefully selected seed mixtures with a balanced leguminous content ensure a permanent cover crop, enabling the vines to get nearly all the nutrients they need without external help. The flowers in the green crop strengthen the ecological balance and provide a habitat for insects.

Background

Thanks to a permanent cover crop with a balanced leguminous content, supplemented by good compost management and only minimal working of the soil, the soil's organic content increases until stabilising at a high level. The capacity to store water and nutrients increases. The number and diversity of soil organisms grow sharply. The roots form efficient symbioses with mycorrhizal and microbial communities, allowing a steady supply of nutrients and water and providing protection from pathogens.

In healthy soils, the long-term supply of nutrients is ensured through a leguminous cover crop without any additional fertilisers. The process can be sped up and intensified by inoculating the seed with rhizobacteria and by adding compost. The leguminous cover crop promotes the development of humus in the soil and stores atmospheric carbon dioxide below ground. The vines gain access to the nutrients they need. The creation of symbiotic relationships with mycorrhizal and microbial communities is promoted. The soil is better able to store water and the ground is better aerated.

In contrast, a vineyard covered by perennial grasses has, with regard to the parameters important for wine-growing, a negative effect on the soil and the vines. Competition for water and nutrients grows, the lack of nitrogen in the grapes results in grassy taste components, and the economic basis of the vineyard becomes endangered. Therefore a cover crop consisting mainly of grass, whether sown or growing spontaneously, should be avoided.

Systematic cover crop management leads to a long-term improvement in soil health, with the seeds of wild flowers finding better conditions to germinate. Indeed, seeds that have been lying in the soil for years, or even decades, suddenly germinate. This also applies to wind-borne seeds and seeds transported by animals. This way, we soon get a cover crop containing a wide variety of species, including a large number of indigenous wild flowers.

Seed: Treated seed is not allowed. Where possible, seed coming from an organic source should be used. The Delinat-Consulting can provide support in selecting seed for well adapted green manure mixtures.

The best way to protect your soil from erosion, biological depletion and losses of nutrients is to have the vineyard covered with a wide variety of green crops, as far as possible the whole year round. A strong growth of seeded or spontaneous vegetation should always be the basis of any cover crop. In wine-growing areas with summer rainfall, the crop can keep on growing during the warm season, remaining green and in bloom. In areas with little or no summer rainfall, the winter cover crop needs to be rolled at the end of spring or the soil to be worked by a stub share to protect the soil from drying out and to preserve the vines of drought stress. In that case the cover crop slowly dries off, becoming green again with the first autumn rainfall.

This sort of cover crop management can and should be standard in all European wine-growing areas. Properly planted vegetation strips, covering only a slight proportion of a vineyard, do not constitute any negative competition for vines, even in very dry areas. Their influence on the vineyard's organic activity is however enormous, and helps decrease the risk of disease through pathogens.

The Delinat quality grades therefore set the requirement for a certain partial area within the vineyard to have an all-year cover crop, distributed regularly. The area directly beneath the vines may be tilled superficially. Obviously it is also possible to cover crop the area directly beneath the vines, and to till the aisle instead, whenever this better corresponds to customary practice in the vineyard. The key thing is that the minimal amount of cover crop areas corresponding to level 1D, 2D or 3D are distributed regularly on every hectar and the whole year over.

Wine producers operating in areas with little or no summer rainfall (average rainfall between 1 May and 30 August below 50mm) may for Delinat quality level 1D, 2D, 3D apply to be exempted.

Must a cover crop always be "green"?
Having a cover crop means that the soil is covered by vegetation. This will turn yellow if there is no rainfall over a long period. If the crop is rolled before completely drying off, an organic mulch layer is formed. This in turn protects the soil from drying out. Furthermore the roots of the cover crop help keep the soil in place. Immediately after enough rain occurs, the cover crop regenerates itself, turning green again. The decisive factor is not the colour of the cover crop, but the fact that the soil is permanently protected and kept organically active by a layer of vegetation.

Winter cover crop and winter rest
In all southern wine-growing regions, a strong-growing winter cover crop can provide a full year's nutrients to the vines and obviate the need for additional fertilization measures. Since in almost all of Europe's wine-growing regions the heaviest rainfall occurs in the winter half-year, growing a green cover crop during the winter is also the most effective protective measure against soil erosion. During this winter rest period there is no fear of competition for water and nutrients. Winter planting improves water infiltration, increases the water retention of the soil and activates soil life, speeding up the recycling of nutrients and reducing the risk of infection by vineyard pests.

For the above reasons the Delinat guidelines provide for a winter rest period of at least 6 months, with a sown or spontaneous winter cover crop across the entire vineyard. No tilling is permitted during this period. It is allowed, however, to commence at different dates the six month rest period for the area under the vines and the six month rest period for the aisles. For example the area under the vines can be left unworked from 1 August to 1 February and the aisle area from 1 October to 1 April. It is also permitted for the winter rest period to begin and end at different dates in different vineyards. This must be documented in the appropriate soil journal. The aisles may be worked during the 6-month hibernation period only with new seeding or a single deep tilling without destroying the soil surface.

Do not apply surface tillage. Ideally, direct seeding is used. This reduces the risk of erosion, protects microorganisms, builds up humus instead of breaking it down, and saves costs, time and fuel.

For increasing the nutrient efficiency of the winter cover, other than in permanently covered aisles, we recommend sowing with a special winter seed mixture (e.g. Delinat winter seed).

Flowering plants

Flowering plants should grow between the vines during the entire season. Each plant species in a vineyard cover crop provides a habitat for an average of twelve species of insects and over a thousand species of micro-organisms. The greater the diversity of vegetation, the higher the biodiversity of insects and microorganisms. This in turn has a major influence on the stability of the ecosystem and therefore also on the protection of the vines against pests. To provide a habitat for insects and microorganisms, it is crucial that the cover crop plants are not mown or mulched too frequently.

It is important that the plants are allowed to bloom, as the scent of the flowers and the nectar attract an especially large number of insects. If the green cover is kept short by mowing or mulching, this should be undertaken on an alternating basis, i.e. only in every second green-covered aisle, so as to protect insects, lizards and other small animals. Where no other bloom areas such as embankments are present in the vineyard, a minimal number of aisles corresponding at least to 10% of the vineyards surface has to be left as a bloom area. No bloom area can be mulched or mown before 1st July each year. Since rolling (rolojacking) does not destroy the flowers and hence the insect habitat, the rolling of cover crop does not have to be done on an alternate aisle basis and is also tolerated for the bloom area.

1.2 Soilwork

Objective
To minimise all working of the soil and the use of heavy machinery. Build-up of humus content.

Background
Any working of the soil disturbs and endangers the biological network in the ground and degrades organic matter. This means that all working has to be kept to a minimum. It is only allowed when initially sowing or enhancing the cover crop and companion plants and to reduce drought stress.

In unprotected, dry soils exposed to the sun, microorganisms temporarily perish, thus reducing soil fertility. This is to be prevented by mulch covering.

Good cover crop management prevents grass monocultures. Deeper soil levels can be loosened through the use of deep-rooting plants. The regulation of the wild flora should be achieved through appropriate plant cultures and the supply of nutrients.

Frequent tilling, hoeing or ripping of the vineyard soil is not allowed. A large-scale tillage in yield vines at a depth of more than 10 cm is prohibited. A loosening of the subsoil deeper than 10 cm by cutting without turning is desirable in order to release compaction, aerate the soil and make it receptive to heavy rain. The guiding principle is "shallow tillage and deep loosening".

For new plantation of vines or plantation of secondary crops within the vineyard a deeper tillage is tolerated. As far as possible, no heavy machinery should be used. Wide tyres (distributing weight) with as little pressure as possible (less than 1 bar) are recommended. Clay soils low in humus are particularly susceptible to soil compaction.

To prevent moisture evaporating in long dry periods, rolling the cover crop is recommended. For rolling, in particular the Rolojack or similar rolls are suitable. Depending on the terrain and vegetation, even turned-off ploughs can serve the purpose. The goal is to bend the stems without cutting them or separating them from the roots. The sap flow is slowed down considerably, but the plant does not die. The roots remain anchored in the ground without immediately shooting out. The rolled greenery provides excellent cover during the dry season, protecting against evaporation, sunshine and heavy rainfall. So the soil remains moist and cool even in drought and very hot weather.

All these measures maintain and increase the humus content. Humus increases the water infiltration and storage capacity of the soil and the stability of the soil aggregates, which leads to less erosion. The more diverse and active microbial biomass results in a better availability of nitrogen even during drought stress and generally in increased plant health. Such soils thus also have a better ability to adapt to climate change, both during heavy rainfall events and in dry periods. Modern arable farming practices a two-dimensional soil cultivation not deeper than 5 - 7 cm!

1.3 Fertilising

Objective
To create the right conditions for a stable, as far as possible self sufficient nutrient cycle based on long-term humus management, avoiding mineral fertilisers and organic fertiliser concentrates and promoting long-term bio-diversity on and in the ground.

Background
In healthy soil the roots of a fully grown vine will have symbiotic relationships with more than 5 trillion micro-organisms. It is only through these micro-organisms that plants are able to take up the organic nutrients found in minerals. The main focus of any fertilising in organic wine-growing is therefore directed towards maintaining soil fertility and its microbiological functionality.

The terroir of a vineyard is only discernible in wine when the soil is organically prepared for the vine. Synthetic mineral fertilisers on the other hand destroy the organic network in the soil, leading to a one-sided supply of nutrients and a low-quality wine lacking character. The basis for a long-term supply of nutrients to the vine is to be found in a balanced nutrient content and the stimulation of organic processes in the soil. Well-structured soils with high organic activity not only constantly release stored nutrients, but also help plants develop their own resistance mechanisms, improving plant health. To achieve such conditions, a good supply of humus and a cover crop with as much diversity as possible are essential.

Complete biological cycles are needed in vineyards. All vine-cuttings must be left in the vineyard, as they can cover over 90% of vines' phosphate requirements. Marc (the solid residue left after pressing grapes), yeast filtrate and all other residues from wine-making should be returned to the vineyard. The marc can cover 30%, the yeast filtrate a further 10% of annual nitrogen requirements. A well-conceived humus management involving cover crops, compost or wood chippings helps to improve a soil's aeration, its capacity to store water, nutrient availability, as well as its capability to break down and fix harmful elements. In addition, the soil becomes more resistant to degradation dangers like erosion, sealing and compaction.

The use of mineral fertilisers is forbidden for the following reasons: Mineral fertilisers consist of highly-concentrated salt compounds. When micro-organisms or plant cells come into contact with such particles, their cell water is sucked out, meaning that they eventually die from loss of water (plasmolysis). Furthermore, mineral phosphate fertilisers often contain large amounts of the toxic heavy metals uranium and cadmium, which become enriched in the soil and in the food chain.

The minerals found in rock flour generally take the form of carbonates and oxides. In contrast to fertiliser salts, water attraction is low, meaning that the soil fauna is not at risk. Plants' capacity to absorb rock flour minerals is less than for those of fertiliser salts, and is greatly dependent in particular on the soil's biological activity and its pH-value. This is the reason why rock flour is not generally seen as a fertiliser, being more commonly used to prevent deficiencies of certain elementary substances.

Rock flour is often used as an additive in compost production or for "charging" such organic soil conditioners as biochar. In cases where rock flour is added as a plant fortifier in the application of pesticides or directly injected into the soil, its use must be declared (recorded in the fertiliser book). Overuse of rock flour can lead to an imbalance of elementary substances in the soil and an increase in the pH-value.

Natural lime products such as carbonate of lime, limestone marl, chalk, limestone powder and algae limestone or shell limestone are permitted. Burnt lime (CaO) is forbidden.

In quality compost nourishes the soil and promotes soil life. The nutrients contained in such compost serve first and foremost to build up the humus in the soil. For these reasons compost is classified as a soil improver and not as a fertilizer, as long as the ammonium (NH4) content is under 100 mg/kg TM.

When using compost, particular attention should be paid to potential pollution (heavy metals, antibiotics, pesticide residues etc.). When in doubt, the necessary analyses must be carried out or requested. Maximum levels according to the EU Regulation on Organic Production in mg/kg of dry matter: cadmium 0.7; copper: 70; nickel: 25; lead: 45; zinc: 200; mercury: 0.4; chrome: 70.

1.4 Intensity of applying fertilisers

Objective

To create self-sufficient nutrient cycles through cover crops, humus management and the recycling of all organic residues from wine-making. The intensity of all fertilising measures is adapted to the yield and to local soil and climate conditions.

Background

What is taken out of the soil at harvest-time needs to be put back in a sustainable form. That's the simple truth of the matter. The winegrower is obliged to protect his soil from nutrient loss caused by erosion, washout and emission of gas. Organic activity and diversity must be promoted through appropriate soil management measures. Any additional need for N-P-K-Mg nutrients can be covered through compost, wood chippings or other organic plant nutrient matter. Compost contains mineral nutrients bonded organically. Slaughter waste (horn meal, bone meal, blood meal, etc.) and products containing slaughterhouse waste are prohibited. This applies to both direct application in the fields and mixing in with compost.

All fertilising should be done in spring to avoid excessive washout rates and in particular high nitrous oxide (laughing gas) and methane emissions affecting the climate. When any fertilising is planned where the maximum approved amounts of fertilisers (see table 1.4) are to be exceeded, a written exemption needs to be given by Delinat-Consulting. The application must be accompanied by soil analysis results from a qualified and accredited laboratory proving the need for extra fertilising. Such an analysis must contain the following values: N, P, K, Mg, Ca and humus contents. This also applies for any new vine-planting.

Calculating the amount of fertiliser needed using fertiliser units is derived from an obsolescent system of mineral fertilising. The values stated here are all much too high when effective protection against erosion is available, when fertilisers are applied at the right time and when using organic fertilisers, as there are much less losses through wash-outs, gas-leaks or erosion. The amount of fertilisers used should be dependent on the respective size of harvest for the plot concerned. The values listed in the table are maximum values, not general needs.

Even using compost as manure there is a risk of a temporary over fertilising, if it is done intemperately. High doses of nitrogen cause inevitably a high susceptibility for diseases in the vines. The actual nutrient contents of a compost can be defined with good approximation by chemical analysis.

If the production and distribution of compost causes a high energy input (weight, transports), so the creation of organic matter on place by purposeful green manure seeding might represent an interesting alternative.

1.5 Foliar fertilisers and plant fortifiers

Objective

Using herbal and microbial plant enhancers, to stimulate and improve plants' innate resistance capabilities.

Background

Plants do not just take in sunlight and CO2 through their leaves, but also a range of nutrients and in particular environmental information. Molecules penetrate the leaves through both pesticides and foliar fertilisers. There they trigger information chains leading to greater growth or inducing resistance. Certain molecules entering the leaves through their pores however accumulate in the plant and its fruit. This is the case with many pesticides whose presence can be subsequently detected in the wine. In order to further reduce the amount of copper in pesticides, both organic and biodynamic as well as mineral foliar fertilizers and tonics are permitted according to EU-DVO 889/2008, Annex I.

1.6 Irrigation and water retention

Objective

Watering of vines in production should be avoided in order to conserve groundwater reserves and avoid soil salinisation. Vintners who irrigate their vines need to take action to improve the retention of rainwater. The aim is to keep net consumption at zero, i.e. not to consume more water than rainfall collected in the soil.

Background

Through systematic humus management both the water storage capabilities of soil and the availability of water for the vines increases. A deep rooting leguminous cover crop will also enhance water infiltration, allowing winter rainfall to be stored efficiently. Rolling the cover crop in dry weather is a good way of providing better protection against evaporation. Drought-resistant rootstocks are also helpful. If the vines do have to be watered, care should be taken with the quantity of water. Watering is best done at night using a drip-feed to avoid unnecessary evaporation. Watering systems should be checked regularly for damage. Vintners who irrigate their vines need to take action to improve the retention of rainwater. The humus content of the soil should increase or at least not decrease. The soil may only be minimally processed. The permeability should be improved by loosening every 1 to 3 years, so that rainwater seeps better and faster into deeper layers. It is important that the earth is not turned, but only vertically "cut" into fine grooves or notches. Also, canals (Swales), water retention ponds and infiltration ditches improve the topographical structure, so that even in heavy rainfall as little as possible or only small amounts of water drain away so that there is sufficient time for infiltration and the groundwater flow can recharge. Each farm should create such retention areas on and around the farm.

Basically, it is a matter of slowing down the flow and leaving plenty of time to percolate. Helpful are methods that have proven themselves in permaculture. Any irrigation of vines in production must be recorded in an irrigation journal, with details of the amount, duration and method used and the source of the water. In order to conserve groundwater or river water, only locally collected surface/rainwater should be used for irrigation.

2. The Vineyard as an Ecosystem

2.1 Ecological compensatory areas

Objective
To make the vineyard itself an ecologically valuable environment, avoiding monocultures. Through measures targeting biodiversity, the vineyard is stabilised and harmonised as an ecosystem, with external plant protection measures becoming the exception and not the rule.

Background
The predominant monocultures currently found in vineyards lead to a weakening of ecosystems. One particular result of this is a greater susceptibility to plant pathogens such as oidium, peronaspora and other pests such as vine moths.

Through the systematic introduction of biodiversity in areas given over to wine-growing, this susceptibility can be avoided more simply and more sustainably, and at less expense, than when using industrially produced pesticides, which at the end of the day cause permanent ecosystem degradation. Major importance for biodiversification in vineyards is attached to creating "ecological compensatory areas" in the vineyard itself and in its surroundings. Such compensatory areas must make up at least 12% of the total wine-growing area, and should be interlinked, not only within the vineyard, but possibly with compensation areas surrounding the vineyard. Neighbouring uncultivated areas, scrubland, heaths, etc. belonging to the local community and not certified by other wine growers as ecological compensatory areas may also be included.

Biotopes are desirable, made up of hedges consisting of a variety of native shrubs along the waysides, native trees or whole copses in suitable locations, ponds, rough pastures, clumps of stinging nettles, blackberry bushes, wild roses, reeds, bushes, scree, heath, scrubland, rock, streams, dry-stone walls, etc., as typically found in the area. A strip at least 3 metres in depth where no fertilisers are used must be guaranteed alongside streams (please pay attention to any national regulations!).

For monitoring purposes, the areas designated as ecological compensatory areas are to be marked on large-scale land maps. Of the 12% ecological compensatory areas 7% must be within or right next to the wine-growing areas. Further 5% can be taken into account without direct neighbouring a vineyard, if they are located within a range of 1000 meters from the next companys vineyard. In no case areas or parts of it that are outside the radius of 1000 meters can be taken into account. If the portion of neighbouring areas doesn't attain 7%, applying for a special approval (CE) at Delinat-Consulting is needed. This exemption must be compensated by reenforced measures for biodiversity to be agreed upon in consultation with Delinat-Consulting.

2.2 Structural diversity and vertical biodiversity

Objective

To make the vineyard an attractive place for insects, birds and small animals, but also for yeasts and airborne bacteria, by the presence of trees, bushes, wild flowers and stone heaps.

Background

Structural diversity is an important criterion in assessing habitats. Biotopes rich in structural diversity provide numerous organisms with a potential habitat. As animals can "immigrate" into the vineyard from neighbouring woods, meadows and scrublands, the biodiversity increases in line with the increase in structural diversity. Shrubs, either in the middle or on the edge of cultivated areas, are a way of providing valuable structural diversity. At the end of each row of vines, shrubs, as far as possible native ones, should be planted. Such bushes hardly cause any decrease in the cultivated area, work between rows is not impeded, yet the ecological benefit is very high. The shrubs should grow between the vines, on neighbouring embankments, or at the end of the rows with a maximum distance of 15 m from the vines. Bushes that are included in a hotspot can be counted in, as can woody bushes like lavender, thyme or rosemary, when at least 50 cm high. The majority of the shrubs should, however, reach at least the same height at the vines. The minimum number of bushes must be fulfilled for each separate hectare. Bushes at the edge of a plot count only for the adjacent hectare and may not serve to compensate missing bushes inside another plot of over one hectare.

Trees in the middle of a low-growth cultivated area with little structure are a great attraction for both birds and insects and for other species, contributing to a long-term recolonization of the ecological habitat. In addition, trees standing on their own are good for catching spores, allowing yeast and other fungi to spread in the vineyard (providing a wide range of natural yeasts for use in wine-making and competing harmful fungi).

Biodiversity hotspots are places within vineyard plots where all sorts of wild plants and at least one tree grow. In addition, fruit trees, herbs, vegetables, berry-bearing bushes, etc. can be planted. These act as magnets for insects and micro-organisms, but also as areas where wild seeds can spread. Hotspots are ideal locations for special structural elements such as heaps of stones or wood, insect hotels or bee hives. A hotspot should be at least 30 m2 in size. The maximum allowed distances between vines and the next tree are to be respected.

Vitiforst (vines and (fruit) trees)
The Vitiforst concept (vine forest garden) goes one step further. Vitiforst is an old cultural form in which sustainable forms of life and habitats are established. These ensure a lasting and resilient basis for life for nature and mankind: ecologically, economically and socially. A vine-forest garden is a permanent culture in storeys. In addition to the spatial, the temporal staggering is also important. By skilfully designing the landscape, in which plants and regulatory intervention are symbiotically enhanced, even degraded soils can be transformed into fertile oases. Vitiforst offers the following advantages:
- compensation of weather extremes
- higher biodiversity
- promotes beneficial insects
- important bee pasture
- windbreak
- bats develop better - they reduce pests, especially grape berry moth
- reduces excessive solar radiation
- reduces temperature on hot days
- trees activate soil life and increase humus formation
- trees promote mycorrhiza fungi and the root volume of the vines
- the roots loosen the soil
- water from deeper layers is transported into the topsoil
- trees increase the storage of CO2

To achieve the full gain of the positive effects of the presence of trees in the vineyard ecosystem, several trees should be planted per hectare. Each vine should be less than 50 metres distant from a tree. Trees within rows of vines can be pruned as pollarded trees.Just as useful as the presence of trees is that of shrubs, the number of which should be increased therefore.

In order to promote further habitats, two elements per hectare are to be placed in the vines (mandatory from 2023 on). Such elements are nesting boxes for birds and bats, perches for birds of prey, insect hotels, cairns, branch piles, water areas and similar structural elements.

3. Plant protection

3.1 Pesticides

Objective
The aim is for a viticulture requiring as little intervention as possible. This is achieved in particular by robust grape varieties and a rich variety of accompanying flora, compensation areas, secondary cultures, insects, soil organisms and small animals. Pesticides should be kept to a minimum - if possible using only herbal and bioactive agents.

Background
For the past fifty years, pesticides have been used in wine-growing more than in any other agricultural sector. This is attributable on one hand to the extreme prevalence of monocultures in wine growing areas, and on the other hand to vine debilitation through a one-sided supply of nutrients in organically impoverished soils. A further reason is found in the pesticides themselves, which induce an increasingly negative selection of resistant pests, meaning that new pesticides have to be applied in ever-increasing dosages. The first step towards long-term plant protection is therefore to organically reactivate the soils. Measures promoting vertical, cultural and genetic biodiversity prevent the spread of pathogens, and support their natural enemies.

An exact observation of plant behaviour, precise climate and weather observation and efficient application of pesticides allow their tailored and reduced use. The less the need to use pesticides (through these methods), the greater is the potential of organic and bioactive pesticides. Though not so potent, in most cases their effect is adequate in a sustainably managed vineyard.

Current eco-guidelines stipulate no limits to the amounts of sulphur used. Although sulphur is a natural pesticide in use for centuries, it is also a toxic broadband fungicide bringing death not only to oidium but also to other yeasts, fungi and insects, all needed to keep the ecosystem in balance. The use of sulphur must therefore be just as limited as that of copper, with the objective being to completely avoid its use in the middle term. An appropriate selection of different rootstocks can also help reduce the use of pesticides. The dosage of wet sulphur can be reduced by adding potassium hydrogen carbonate, that of dusty sulphur by adding rock flour, primary rock flour, limestone flour, ground clay, bentonite or algae limestone.

Grapes contaminated by wind-borne pesticides must be picked and processed separately and labelled accordingly. Every winegrower is responsible for taking appropriate measures to prevent contamination through wind-borne prohibited pesticides.

To prevent contamination from conventionally farmed agricultural areas, grapes from the first two rows neighbouring such areas must be picked and processed separately, and labelled accordingly. The minimum distance between conventionally cultivated areas and the first vines with grapes to be used in the organic wines is 4 metres. If the neighbouring conventionally cultivated rows of vines are managed by a certified Delinat wine-grower using organic products, the protection zone is shifted accordingly. We recommend planting a hedge as a way of delimiting conventionally managed vineyards. Such a hedge will be recognised as a valuable ecological compensation area. If conventionally farmed neighbouring areas are sprayed from a helicopter, the minimum distance is increased to 60 metres. The wine-grower must ensure that no contaminated grapes are used in his wines.

Vineyard plans must clearly show which neighbouring areas are farmed using conventional methods.

The application of copper and sulphur is regulated as follows:
A sum of five years' amounts of Cu and S related to each Delinat quality level is fixed, this sum cannot be exceeded. In very unfavourable years special approval can be sought from Delinat Consulting to overstay yearly maximum amounts of copper and/or sulphur by up to 50%. This transgression must be compensated in the other years taking into account the five years' sum. In the event of a succession of climatically difficult years, permission can be requested from Delinat to exceed the five years' sum at level 1D by 0.4 kg Cu or 20 kg S via CE (Certificate of Exemption). For companies that have not yet arrived at their fifth year of Delinat certification, the calculation base reduces itself according to the number of years and the Delinat quality level previously declared (look for details at FAQ 3.1.1).

Reduction of copper and sulphur

There are many reasons for banishing the problematic excipients of the heavy metal copper and the nerve poison sulphur from vineyards or greatly reducing their use. In the long term, they should be waived. This goal can be achieved especially with robust grape varieties that know how to defend themselves against fungal diseases. In dry regions, even classical European vines without copper and sulphur can produce healthy grapes, if the effects of monoculture are broken by a rich biodiversity. In most areas, however, "normal" vines cannot survive without more or less intensive crop protection. There, however, fungus-resistant new grape varieties can be planted that defy the usual fungi without fungicides. The selection of new PIWIs increases from year to year. Most of them have multigenetic resistances, which enable viticulture without copper and sulphur even in humid climates. In addition, the legal situation has changed so that the new varieties are already or will soon be approved in most wine-growing regions.

For these reasons, the Delinat guidelines provide for a regular reduction over the next few years (see Annex "CuS"). Farms that achieve less than 2 Delinat snails in the current year as well as in the 5-year average from 2023 onwards due to excessive copper or sulphur levels will be obliged to increase the proportion of fungus-resistant, resistant grape varieties.

Delinat offers practical help in selecting new grape varieties, and helps vintners change varieties and develop new wine styles.

3.2 Harmful insects and animals

Objective
To create a self-regulating fauna (insects in particular) in the vineyard ecosystem.

Background
Plagues of pests are an unmistakeable sign that the ecosystem is out of balance. For the wine-grower, they are a sign to rethink the way he looks after his vines. In a stable ecosystem with high plant, insect and microbe diversity, the one-sided or frequent incidence of pests from the insect world is unlikely. Through the promotion of biodiversity, the potential of combating pests (for example mesostigmata, ichneumon flies) through their natural enemies is greater. Other organic ways of combating harmful insects such as organic compounds or pheromone traps should only be used as a last resort.

In years of epidemical arising of Drosophila Suzukii (spotted-wing drosophila) in the vineyard, the pesticides allowed for organic wine-growing by the statal administrations can be used with the special approval of Delinat-Consulting (CE accompanied by proof of infestation with traps). For combatting Flavescence dorée the pesticides with CE prescribed by the authorities are tolerated.

When necessary, access to the vineyard is to be made more difficult for birds and animals through the use of fences and nets. Covers protecting the vines from birds and hailstones are to be installed in such a way that animals cannot get caught in them.

4. Research and Trials

4.1 Trial procedures

Objective
Further development of organic viticulture methodology and its adaptation to the varying soil and climatic conditions of European vineyards.

Background
Just as each vintage is unique, the climate, the soil activity, the disease pressure, the susceptibility of the vines, the rainfall, the employee motivation and the market change from year to year and demand a maximum of flexibility, curiosity and intelligence from the winegrower. Working with nature in viticulture means exposing oneself to a constant learning process and again and again calling into question habitual ways of doing.

Organic winegrowers in particular, who work very closely with nature and are thus much more exposed to fluctuations and unpredictability, cannot be satisfied with what has already been achieved and must always continue to develop their methodology and be open to new ideas. For this reason, the Delinat guidelines have been written, not as a static catalogue of prohibitions, but as a dynamic, open system for structuring the present and future of quality winemaking.

Certification to the Delinat guidelines goes hand in hand with advice by Delinat-Consulting, through which certified winegrowers also gain access to the latest results of viticulture and ecology research. Crucial is not only the transfer of knowledge, but also the way the scientific principles are implemented, adapted to specific local conditions and enriched by the combined experience of many winemakers. This calls for the cooperation of inquisitive and innovative winegrowers.

Delinat winegrowers are therefore encouraged to apply to take part in trials. Delinat makes an annual budget available to support this activity. Applications to take part in trials are selected by Delinat Consulting. For each trial, cost reimbursement, objectives, duration, partners, budget, reporting, trial design and a detailed procedure are agreed in writing. Delinat is seeking to reach a situation where, for important issues, trials take place in all climate zones and soil constellations. Delinat Consulting provides the control function, ensures professional treatment of the trial results and makes them available to all Delinat winegrowers.

Through these trials, a fund of experience in new methods and ideas is built up, which benefits all Delinat winemakers and by extension the organic viticulture of the future. Examples of particularly relevant areas for experimentation are:

Trials with cover crops
Optimization of seed mixture, winter cover crops - permanent cover crops, adjusting the implementation strategy, reducing water stress, comparison of seed technologies, maintenance of the cover crop, increasing biodiversity, nutrient input, etc.

Soil improvement
Reduced soil working, rolling instead of mulching, aeration, etc.

Soil activation / fertilization
Composting, use of biochar, bokashi composting with pulp and yeast, refraining from N-fertilization, etc.

Plant Protection
Use of new plant-based agents, use of herbal extracts, alternative strategies for reducing the use of copper and sulphur, etc.

Mixed cultivation
Vegetables, fruit, herb production in the vineyard, planting a vineyard together with a wide mix of crops, etc.

Energy
Developing an energy supply from renewable, local resources. Installations of solar panels, of wind power, of hydropower, energy or water recovery systems, etc.

Innovation through suggestions
Several requirements included in the Delinat guidelines are the outcome of wishes and suggestions received from wine lovers. The Delinat online platform offers numerous opportunities for interaction and for open and public dialogue, while product assessments and the Delinat Blog provide forums for wide-ranging discussion. Delinat's "WeinLese" magazine and the Delinat Blog report on these suggestions, and the ensuing trials and results. Where successful, the findings end up in the guidelines.

Processing

5. Wine-making and bottling

5.1 Wine-making

Objective
To produce a lively, tasty wine full of character. Such wines are the product of unadulterated grapes from a well-balanced terroir with a high level of biodiversity, and are proof of a wine-grower's passion for his trade.

Background
Wine-growing methods targeting high levels of biodiversity enable the development of aromatic grapes, which, when subjected to assiduous wine-making, turn out lively, biologically balanced wines with a high aging potential. Outside attempts to improve the wine – sulphurous acid, added sugar, pure yeast cultures, lactic acid bacteria, deacidification, heat treatment or aggressive filtering – destabilise the wine's natural biological balance. The expression of the terroir is falsified, negatively influencing the wine's natural development potential.

To make unique wines with a distinct character from healthy, high quality grapes, the grapes need to be picked selectively and with care. Preference is given to picking by hand. Though modern picking machines are interesting for their harvesting speed, the possibility to harvest cool grapes during nighttime (in southern regions), and moreover the gentle handling of the berries, their big handicap is the heavy harvesting machinery together with the additional weight of the grapes that compacts the soil. This soil compaction reduces biological activity, weakens the nutrient dynamics and lowers water retention capacity. Therefore the present guidelines allow mechanical harvesting only for the Delinat quality levels 1D and 2D.

To prevent grape seeds and stems getting crushed during destemming (this leads to undesired tannins getting into the wine), the destemming machine should be carefully adjusted. Nonstop crushing and too high pressure are also prohibited for the same reasons. When a mash pump is to be used, a machine that handles the mash gently should be acquired. The wine should be pumped between vats slowly and not too often. Ranking and changing vats should be done if possible with the help of gravity.

Grapes with an optimal physiological ripeness give a wine with an alcohol, acid and tannin content and colour typical for the type of grape and the year. Consequently, no chaptalization, whether through adding sugar, grape concentrate or through other technical means, should be done. The same holds true for adding acid and for deacidification. To retain residual sugar in the wine, in order either to regulate the acidity-sweetness balance, or to produce fizzy or sparkling wines, interventions like braking fermentation by chilling ("méthode ancestrale") are to be preferred to subsequent sweetening.

Heating the mash denaturalises the wine, destroying its biological balance. It is therefore not allowed in the Delinat guidelines.

In general, SO2 should be used only at the end of malolactic fermentation, or in order to stop it. However, winegrowers are not always fortunate enough to harvest healthy grapes, and in southern wine-growing regions the high harvest temperatures make less harmful processing more difficult. In these cases, a weak sulphurization of must or mash is tolerated to ensure product quality.

Yeasts and lactic acid bacteria from the vineyard and the wine cellar are an integral part of the terroir, belonging to the wine in the same way as the juice from the grapes does. The use of pure yeast cultures and lactic acid bacteria should only be a last resort or a temporary measure.

The clear objective of Delinat is to produce wines that have been produced with as little harm as possible to the natural ingredients and contain as few foreign auxiliaries as possible. Delinat offers maximum transparency: for each wine the home page gives detailled information on all auxiliary substances and processing methods used. Consumers have unlimited access to this information and can also judge the wines themselves and thus pass on their impressions and desires directly to the winegrower. This transparency enables wine lovers to exercise their responsibility in an exchange of information with the winegrowers.

The winegrower himself is obliged to declare the use of all auxiliary substances and aromatic additives and all winemaking techniques involving machinery or heat. The winegrower's work is transparent and takes the health of his customers into account.

Sparkling wines
Enrichment of grape must is allowed on all three quality degrees Delinat. Adding sugar or equivalent amount of concentrated grape must for the fermentation on bottle as well as the adding of refining liqueur has not to be taken into account for the enrichment.

5.2 Stabilisation, Adjuvants, Filtration

Objective

To achieve a natural stabilisation of the wines via biological diversity in the wine, without any or with only minor additions of SO2. Clarification should make use of gravity, seasonal changes in temperature and be given enough time.

Background

The healthier the soil and vines in a vineyard are, the more complex the aromatic compounds in the wine are and the greater the wine's stability. Furthermore, the microbial diversity in the wine leads both to bacteriological stability and to lively wines with corresponding high aging potential.

The better the organic quality of a vineyard is, the greater the organic stability of the wine and the less the need to resort to clarification and stabilisation measures and filtration techniques. All filtration weakens the microbial and aromatic diversity of a wine, deteriorating its character and authenticity.

The maximum residual sugar content of sweet wine is governed by national and regional regulations. Free SO2 content (mg/l) is measured when the wine is ready for sale.

When measuring the total SO2, make sure that the reductones have been subtracted. The result should be expressed in SO2 content.

5.3 Origin of the grapes / blending

Objective
To create pure terroir wines, expressing the pride and character of a region and the winegrower.
"Assemblages" or blends involve the skilful marriage of different types of grapes from the same region and same winegrower, allowing the creation of distinctive and unmistakeable wines.

Background
A winegrower is only in complete charge of a vineyard's ecological quality management when he works the vineyard himself. It follows that preference is always given to using grapes from one's own vineyard when blending.

Delinat winegrowers belong to the front-runners with respect to high-quality eco-viniculture, acting as role models in their respective regions. Delinat winegrowers should attempt to motivate other winegrowers in their region to introduce organic methods into their vineyards, promoting biodiversity and creating eco-networks. To make it easier for a neighbour to change to organic methods, partnership and delivery agreements for grapes can be concluded. It is up to the purchasing winegrower to control the quality of his neighbour's grapes, ensuring that the grapes are not in any way contaminated. Generally speaking, vinification and labelling should be carried out separately for one's own grapes and grapes that have been purchased.

Grapes from vineyards in the process of being converted to organic methods and those from vineyards where the conversion is complete must be kept strictly separate. Care needs to be taken that the grapes are separately listed and labelled, from their receipt, through the production processes, up to their bottling and storage.

When a winegrower processes grapes of different Delinat-defined qualities, the different grapes and resulting wines are to be kept strictly separated, from their harvesting, through their processing and all further steps, up to their bottling and storage. Different quality grapes must be processed at different times or in different premises, with everything being back-traceable. Wines of different qualities may be blended, but the resulting wine then has the lowest of the qualities involved.

5.4 Storage / cleaning

Objective

To store wine in accordance with the highest hygienic, environmental and energy standards, preserving and protecting the microflora and yeast diversity present in the wine-cellar.

Background

Just as we find a wide range and high number of bacteria, yeasts and other micro-organisms in a vineyard and in wine itself, we also find them on walls, equipment and in the air of any wine-cellar. The promotion of healthy diversity is to be preferred to any one sided sterilisation. Facilities, cellars and storage rooms need to be kept clean to deprive undesired microbes of their means of living. The quality and diversity of yeasts and flora living in a cellar are part of a winegrower's capital and attention needs to be paid to preserving them. When building a new cellar or renovating an old one, care should be taken not to use any paint, plastics or cleaning fluids containing chlorine or bromine, as these have the potential to contaminate wine with TCA or TCB (2,4,6-Trichloroanisole and 2,4,6-Tribromoanisole). Generally speaking, preference should be given to the use of organic materials. Care should be taken to keep the air humidity in the cellar below 90%, to prevent the formation of mould.

5.5 Bottle sealing

Objective
Optimal bottle sealing in both qualitative and ecological terms.

Background
In the early 90s technical sealing systems emerged as alternatives to traditional natural corks, but none of them could totally satisfy the requirements of tightness, durability and eco-balance.

Stoppers produced by gluing together cork granules (cork agglomerates, pressed cork stoppers) as well as agglomerate corks improved by glued-on disks (Twintops) carry the risk of contamination of the wine by synthetic adhesives (polyurethane and the like). The same risk attaches to products made from ground cork and elastic plastic beads moulded into stoppers (e.g. Diam), as well as natural cork plugs, the surface of which is sealed by a paste of ground cork and adhesives (colmated corks).

Fully synthetic stoppers made of polyethylene and similar plastics and those that imitate natural cork (eg Nomacork), are neutral with regard to the wine, but remain permeable to gas and accelerate the aging of the wine.

The "Vinolok" system, which works with glass stoppers and an Elvax (ethylene vinyl acetate) seal, does not present these disadvantages, but is technically complex, requires refitting of the filling stations and has an unfavorable ecological balance.

There remains the screw cap, commonly used for wines with a shorter shelf life, which represents a viable, though not equivalent alternative from the point of the seal quality and life cycle assessment.

The latter two variants (Vinolok and screw cap) do not allow any redox buffering, a feature that only natural cork can perform. Either these closures are gas-tight, which can lead to reductive notes or they permit, via micropores, a permanent gas exchange, which leads to oxidation during longer storage.

Contrasting with all this are the advantages of natural cork. The chemical and physical properties of cork are unique and until now unmatched by any artificially generated material. Thanks to redox buffering, natural cork permits an ideal oxygen exchange for wine aging. Its cellular structure is extremely elastic, allowing subsequent recycling for other uses. Its decomposition is harmless for nature. The shelf life and aging of wine is best ensured with natural cork, providing that TCA contaminations can be ruled out as far as possible through rigorous quality management.

But not only natural cork is the best choice quality-wise for wine stoppering. Its life cycle assessment is far superior to all other stoppers. As alternative sealing systems began to appear, life-cycle assessment comparisons worked for natural cork on the basis of a 3% loss due to cork taste, with a zero rating for screw caps, plastic stoppers, Vinolok and the like. This viewpoint has since corrected, in two directions: first, TCA analysis and quality management with natural cork have made tremendous progress, allowing us to start with a cork failure rate of less than 2%. And second, we know that none of the alternatives is error-free: with both the screw cap and Vinolok there are mechanical influences, for example, blows during transport, and untight seals, leading to leaking or oxidized wine.

Sustainability, climate protection

An important aspect is the extraction of the raw material from the bark of the cork oak. Cork oak forests such as those in southern Portugal are extremely important in the fight against the progressive desertification due to climate change in Southern Europe. Cork oak forests are fantastic large-scale biotopes that provide a habitat for more than 10'000 species (plants and animals). These species-rich forests bind large amounts of atmospheric carbon. The CO2 balance of the final bottle cork is positive. In addition, the harvesting of cork makes locally an important contribution to the preservation of traditional socio-economic structures.

The sustainable use of cork oaks – with the production of bottle corks playing a decisive role here – guarantees the preservation of more than two million hectares of centuries-old cultural landscapes. Even in direct comparison, natural corks have an excellent environmental performance: 4 times more CO2 is emitted in the production and disposal of screw tops than with cork.

Use of cork for stoppering 75 cl wine bottles

A decisive factor in the use of cork for stoppering bottles is its quality. This relates not just the quality of the raw material, but also the quality control at every processing step. The goal is the elimination of contaminated items so as to keep the portion of stoppers with the dreaded cork taste, caused mainly by 2,4,6- trichloroanisole (TCA), as low as possible.

Natural cork is like any vegetable raw material a habitat for fungi. Their metabolic products, which remain even after the removal of the fungi in cork making, in the worst case make the cork unusable as a wine stopper, because with prolonged contact these pass into the wine, giving the well-known cork taint. The best known of these undesirable compounds, TCA (2,4,6-Trichloroanisole), can, however, also occur when originally TCA-free cork stoppers are stored in a room where temporarily musty tones occur, for example, those that can result from the use of chlorine-containing cleaning agents. Cork can also pick up other odours and later pass them over into the wine. It is therefore extremely important to store cork properly.

The literature mentions cork taint levels of 3-5% in wine. The best producers succeed in reducing this figure to under 1%. However, this involves extremely rigorous control of all processing steps using the latest analysis methods.

Processing of cork into stoppers
After punching and grinding of the blanks, the corks must be prepared for use on the bottle. For this they are washed, in most cases printed, and coated.

The washing serves to remove dust and to reduce phenols. To improve the appearance, corks are often bleached with hydrogen peroxide. However, severe bleaching damages the cells on the surface. To maintain the natural properties of cork, gentle washing is required, without bleaching and without using hydrogen peroxide.

Coating is usually with paraffins and silicones, which improve the sealing characteristics and ensure smooth corking and uncorking. In addition there are colouring coatings, for example acrylate based, which like strong bleaching serve only to improve the outer appearance.

To keep the cork surface as natural as possible, paraffin and silicone should be consistently replaced with beeswax and vegetable oil.

For a good sealing performance, professional corking and storage of the wine bottles are, however, more important than the type of coating.

5.6 Glass Bottles

Objective

After the production of the wine (cultivation, ageing), the energy required for the production of wine bottles accounts for the largest share of the ecological footprint, far more than all transport, auxiliary materials and disposal combined. Using wine bottles several times is much more ecological than using new glass every time. Delinat is therefore aiming at a reusable system with about 5 to 10 bottle types (75cl), where the bottles are collected mainly from urban areas, washed and refilled. In addition, Delinat companies are encouraged to use the lightest possible glass bottles.

Background

Every kilogram of newly produced glass consumes 1.5dl of raw oil. Recycling also requires a lot of energy. Used glass must be melted at 1500 degrees. Reusable bottles, on the other hand, are much more environmentally friendly. The energy and resource consumption for return transport and cleaning is much lower than the production of disposable bottles. Glass bottles can be filled up to 30 times.

Social policy

6. Social standards and rights

6.1 Social standards

Objective
To respect the basic human rights of all employees, assigning them work, promoting and motivating them in accordance with their capabilities and needs.

Background
The following guidelines constitute minimum social standards complying with the conventions of the ILO (International Labour Organisation: a special organisation belonging to the UNO). Delinat is committed to socially acceptable working conditions needing to be adhered to by vineyard managers. They comprise part of the guidelines published here.

All employees are guaranteed adequate wages, the opportunity to exercise their rights, and health and safety standards at their place of work are upheld. In doing so, Delinat takes into account existing national and social structures, promoting self-responsibility among managers and owners. It is important to communicate to children a love of nature and respect of winegrowing and agricultural traditions. Children should therefore be given the opportunity to take part in internships, work experience days or weeks during school holidays – on a purely voluntary basis, not affecting the child's regular school attendance and its physical and mental development. Any employment of children under the legal working age is ruled out.

The equal treatment of all employees independent of their race, colour, sex, religion, political opinion, sexual inclination or social origin is a prerequisite for a socially responsible and sustainable work organisation. For the same work the same rights apply with respect to wages, deductions, working conditions and access to company benefits. Statutory minimum wages and social security contributions are complied with, all wage payments are documented, and employees are informed about wages and the conditions relating to their payment. Illegal employment (moonlighting) is not tolerated. Working hours are regulated in accordance with national regulations and industry standards. Working hours and overtime are recorded. There is no compulsion to do overtime. Reciprocal agreements may regulate working hours at peak times, taking annual or average working hours into account. Overtime must be compensated, either financially or through time off.

6.2 Employment contracts, safety, rights

Objective

For all employees to have written and clearly understandable contracts.

Background

Every employee receives a written contract, with the exception of work periods shorter than six days. The contract contains a description of the work to be performed and provisions regulating basic wages, the method of payment, overtime and time-off, deductions, together with information on the employee's rights and obligations. In certain exceptional cases, an oral contract is acceptable. Accident and health risks are to be minimised at work by taking appropriate measures. Employees are informed of the risks associated in particular with the use of pesticides and given adequate training.

Addendum

7. Documentation

7.1 Cultivation records

Objective
To keep a careful journal of company vineyard activities and plans and lists of the various plots.

Background
It is essential that a journal be kept, recording all decisive activities and flows of materials. A carefully kept journal is the only way of ensuring transparency vis-à-vis the customer and allowing Delinat Consulting to effectively provide advice. Finally, the journal provides the absolutely necessary basis for control. The work processes that are to be documented are listed in the table 7.1. For the monitoring comparable corresponding records instead of the bio.inspecta forms are equally accepted.

Maps and/or aerial photographs must be available for all plots on the undertaking. These must contain the following information: map scale, clear designation of the plots following the plot list, ecological compensation areas, conventionally-cultivated neighbouring areas, hotspots, distance of the vines to the nearest tree, bushes up to 15m to the vines. With annually updated ortho photographic aerial photographs, biodiversity elements can be directly recognized by the control, here only the conventionally farmed neighbouring areas to be added.

In addition, **a plot list** must be kept with the following information: clear plot identification (number or name), plot EU bio-certified since, plot Delinat-certified since, plot with Delinat biodiversity in transition since (only for new areas, maximum 5 years.). The three surface sums from the plot list are to be transmitted every year in the online production unit declaration: total hectares under conversion to EU-Bio, total hectares EU organically certified and Delinat in conversion, total hectares Delinat-certified.

7.2 Processing records

Objective

To keep a careful journal of company cellar activities.

Background

The documentation of the origin of the grapes, of every processing step, of the use of auxiliaries as well as the retraceability from the bottle to the vineyard assure transparency for monitoring, purchasing and consumers. The records and lists that have to be presented at the cellars monitoring are specified in table 7.2. Comparable corresponding records instead of the bio.inspecta forms are equally accepted.

8. Sustainablility

8.1 Principle

Objective
Delinat wineries meet all the requirements of an operating system that combines economically efficient thinking and practice with the highest possible standards of climate protection, energy efficiency and ecology. In terms of sustainability, Delinat wineries rank above-average for their country or region.

Background
Compliance with climate protection measures such as maximum energy efficiency, use of renewable forms of energy and resource conservation are essential prerequisites for modern and responsible management.

8.2 Energy

Energy management is of fundamental importance for a sustainable economy. Energy from non-renewable sources must be replaced by renewable forms of energy. The consumption of fossil fuels, which is difficult to circumvent (for the time being), has to be compensated. Delinat undertakings produce renewable energy with their own resources based on sun, wind, water, wood, geothermal energy, etc..

Energy accounting, renewable energies
From 2017 onwards, statistics for the different types of energy (diesel, gas, electricity, etc.) used in the field and in the cellar are to be compiled at each year-end. These figures form the basis for calculating of the share of renewable energy to be produced on the holding.

Energy production
From 2021 onwards, the minimum percentage of renewable energy produced on the holding will be (share of the total energy demand for field and cellar):

1D: 30% 2D: 60% 3D: 100%

Electricity production from shared renewable energy projects, in which the undertaking is financially involved, can be included if the energy is produced within a 100 km radius. A 4- year transitional period applies to companies new to the Delinat guidelines.

Certificate of exemption
If it is impossible to generate energy on the farm itself for technical reasons or due to building regulations, and if it is neither possible to participate in external energy production within a radius of 100 km, the following exemption is granted for a transitional period: The purchase of energy from an external energy production facility more than 100 km distant is tolerated. The electricity must be 100% renewable. This emergency solution must be applied for annually with a exemption and may not last longer than 4 years.

Main farm with suppliers
Suppliers can be integrated into the overall accounts of the main farm or cover their energy requirements with their own plants.

Compensation of fossil fuels
Use of fossil fuels must be limited as far as possible. Their consumption of fossil energy must be converted on the basis of the following energy equivalents and be compensated with electricity from renewable sources:
1 litre of diesel = 10 kWh of electricity
1 m3 natural gas = 12 kWh electricity
1 kg liquid gas = 14 kWh electricity

Energy efficiency
Until the 100% renewable energy target is achieved, each undertaking will also demonstrate that it has taken at least three measures to implement energy efficiency. Examples include energy-efficient cooling, heat recovery, insulation, solar thermal energy, and solar and wind power generation.

8.3 Disposal

Each winery guarantees that its sewage is treated by a sewage treatment plant or that the national regulations governing cellar effluent are adhered to.

Copper or sulphur sprays may not be disposed of either on fields or into drains.

Each winery separates out and recycles its waste: glass, paper/cardboard, metal, hazardous waste, plastic (if possible), organic waste.

Microparticles of plastics (microplastics) are one of the major unsolved problems worldwide. Microplastics can now be detected in water sources, arctic ice, nature reserves, drinking water and human blood. Delinat winemakers are said to be doing everything they can to prevent more plastic from entering the environment through their actions. They use alternative binding materials for the vines that are degradable, e.g. cellulose, straw, willow, jute, cotton, etc. Binding materials consisting of a very thin iron wire sheathed in degradable, natural material are tolerated. Plastics will no longer be allowed in the medium term. The vineyards are to be kept free of plastic waste. When renewing the tying system or for new installations, materials for tying must be used that are biodegradable.

Especially concerned are ligatures, wire tapes, films, irrigation hoses, bird and hail protection nets and seedlings protection.

8.4 Promotion of rare species

Delinat winegrowers encourage the return of the native species ("red lists") that have disappeared in their regions, by creating habitats for them. They list the species that have disappeared and which could potentially return if conditions are improved, and record for each species those measures that could permit resettlement. They implement these measures in a targeted way. For producing the lists, Delinat winemakers obtain expert advice from regional or national species protection organizations. Delinat can be asked to provide support for promising projects.

Invasive neophytes like Japanese perennial knotweed (Reynoutria japonica), Himalayan balsam (Impatiens glandulifera), Ambrosia (Ambrosia artemisiifolia), and Canadian goldenrod (Solidago canadensis) present a threat to native flora and fauna. Delinat winemakers are required to take the necessary measures to recognize them, remove them and prevent their spread.

8.5 Life Cycle Assessments

Delinat regularly produces ecological assessments, in order to improve transportation, packaging and generally the climate balance. Delinat abstains on principle from including overseas wines in its product offering. Air transportation of Delinat products is excluded.

8.6 New plantings

Objective
For cultivation systems, only sustainable and degradable materials should be used.

Background
Pesticide-treated wooden posts and galvanized metal posts release toxic substances into the soil and environment. Therefore, only non-galvanized metal or untreated wooden posts should be used. Robinia wood is particularly resistant and also inexpensive.

New plantings should only be established with untreated wooden posts and with non-galvanized metal posts and wires.

9. General conditions

9.1 The Delinat quality grades

Objective
All Delinat companies meet the highest Delinat quality standard of 3D. They operate energy-efficiently and as climate-preservingly as possible through the use of renewable energies.

Background
The Delinat guidelines provide for three quality grades, designated by one, two or three Delinat snails. The quality grades apply both to winegrowing and winemaking. In the area of winegrowing they apply to the entire vine area. In winemaking, they apply to the individual products. For new surface areas, a maximum 5 years adaptation period is granted for meeting the ecological diversity requirements in terms of bushes, tree distance and ecological compensation area. Grapes from new surface areas can be Delinat-certified once the surfaces are (after the 3-year conversion period) EU bio-certified and fulfil the Delinat requirements.

The aim of the grades in winegrowing has nothing to do with any over-regulation or limitation of a winegrower's vinicultural freedom. It is directed towards motivating the winegrower to convert his vineyards to sustainable production methods. It represents a dynamic system aimed at converting the vineyards to a completely organic basis within a few years.

To gain recognition
in one of the three Delinat grades, the following requirements must be met:

1. Compliance with the EU or Swiss Organic Farming Regulation (annual inspection and certification by a EU or Swiss monitoring body). Delinat vineyards are controlled and certified annually to the current guidelines. The documents issued by the certification office are valid only for the year in question.

2. To complete the electronic company declaration form.
The declaration form is submitted online, with the correctness of the data entered being guaranteed via a password and an electronic receipt. The company declaration form relates to compliance with the viniculture regulations and vinification guidelines set forth here. The company declaration form contains – in the form of a checklist – all requirements to be fulfilled within the company or business relating to the specified grade. The company declaration form is monitored by bio.inspecta Switzerland during the certification act.

A company declaration is valid until august 15th of every year, on which day it expires automatically. Within 6 weeks, i.e. until september 30st, a new form has to be filled in. Companies in their first Delinat year can complete their declaration form at any moment.

3. Respect of local, regional and national environmental and social legislation. Activities like corruption, the hunting of rare or protected animals, or the collecting or protected wild plants, are forbidden.

4. The actual guidelines are in the company and the company's manager is acquainted with it. The Delinat guidelines are being improved all the time and adapted to the newest findings. The winegrowers are called in to cooperate in this procedure.

5. The annual Delinat advanced training seminaries are attended by the companys manager and/or the company has been visited by the consultant of Delinat-Consulting. This applies for grape supplying companies too.

9.2 Inspection and certification

EU respectivly Swiss monitoring certifies compliance with the EU respectivly Swiss Organic Farming Regulation. Membership of a recognised eco-producer organisation in the country of origin is recommended. Winegrowers labelling their wines with one, two or three Delinat snails as a seal of quality are subject to the monitoring procedure set down in the Delinat guidelines and are certified by the body commissioned by Delinat. The certification body is independent and has itself an ISO 17065 certification.

The certification body commissions an independent inspection organisation certified in the respective country to carry out inspections at all grades. The certification body specifies which documents are needed for the inspection and certification.

Special Cases of Certification
Upon Delinat certification and decertification, special rules apply as set out in Annex “Cert”. When deciding whether or not a wine should bear the Delinat logo, these rules apply exclusively. They do not concern the producers, but only the certification body in Switzerland, therefore this appendix exists exclusively in German and there is no translation into other languages.

10. Delinat purchasing criteria

10.1 General criteria

Objective
Delinat customers can rely not only on products produced in a biologically and ecologically sound fashion, (Chapters 1-9), but also on superior taste quality and excellent value for money.

Background
The Delinat guidelines are intended to provide an alternative to industrial monoculture wine-growing. Sustainable viticulture is possible only in a healthy natural environment. For this reason the Delinat guidelines do not simply impose prohibitions on winemakers, but offer practical help and paths for meeting their objectives. They also provide a solid basis for the control bodies responsible for certification according to the Delinat rules. Chapters 1 to 9 of these Guidelines are intended for these two objectives.

This Chapter 10 is not an integral part of the policy, i.e. it is is not subject to control by the certification bodies. It is for information only for wine connoisseurs and wine-growers.

Wine produced in accordance with Chapters 1 to 9 of these guidelines will, at a minimum, meet the highest ecological standards. But will it also taste good? And is it "clean"? An organization may satisfy all points of the guidelines at the highest level and bring the wine into the bottle in a fully natural way without any treatment or additives. But without subsequent assessment of taste and analytic quality it would be no more than a product produced according to the book. Compliance with the guidelines gives no automatic guarantee that the wine tastes good and is worth its price. For this reason Delinat has internal guidelines in order to guarantee quality at this level.

10.2 Internal quality guidelines

1. Organoleptic quality
Each wine passes through several stages of internal blind tasting, in which at least three Delinat experts check the visual, aromatic and flavour quality. A wine that does not score at least 13 out of a maximum of 20 possible points it is not included in the Delinat range.

2. Analytical Quality
After passing the purchase tasting, each wine undergoes complex chemical analysis. Over 50 parameters are checked here, including allergens such as histamine. Checking is not confined to the limits set in the guidelines. Taken into account also are correlations that provide information on quality and shelf life. If limits are exceeded or doubts arise as to quality, then the wine is not included in the Delinat range.

3. Pesticide sampling
Synthetic pesticides have been found even in organically produced wine. Studies have shown the main reason to be drifting spray from conventionally worked neighbouring vineyards. But cases of contamination have also occurred in cellars in where organic and non-organic wines are processed together. It requires just one 1 litre of conventionally produced wine to be mixed with 10,000 litres of organic wine for pesticide to be detected.

While the controls to which Delinat winemakers are subject regarding the use of chemical pesticides leave no room for doubt, there is no absolute guarantee against drift from neighbouring estates. At the same time, analysis methods are becoming increasingly sophisticated, so that increasingly environmental toxins of all kinds that are present in air and rainwater in minuscule amounts can be detected. Delinat grapes and wine cannot be cleaner than their environment. Quantity-wise, wines from pesticide-addled vineyards and bio-diverse Delinat natural paradises are worlds apart. This also explains why the above mentioned one litre of conventionally produced wine can so pollute the 10,000-fold amount of clean wine as to reach the detection limit.

Every year, wines from of at least 10% of all Delinat winegrowers are randomly tested for pesticides. Broad-based pesticide analyses are extremely expensive, as different products are used from one region and country to another. Some disintegrate relatively quickly, calling for a targeted search for decay products (metabolites). Winegrowers in whose wine pesticide residues are found in conspicuous quantitites are subjected to specific and intensive review. These wines and winegrowers are also reported to the local bio-control authority.

4. Fingerprint

After successful certification and positive quality testing the Delinat label is awarded and the wine collected from the winegrower. On entering the Delinat cellars, samples are stored in an archive. In the event of any later doubts as to quality, these samples can be compared with the originally analysed commercial samples. Comparison of all of the more than 50 analysis parameters allows a wine to be clearly recognized (fingerprint), and also subsequent deliveries to be checked against the original sample. This form of control is unsuitable for preventive application, but could serve to dispel any doubt should the need arise.

5. Customer rating

Even wines that meet all the points mentioned above do not always prove popular with wine lovers. If wines on the Delinat online platform are rated by customers with less than 3 out of 5 stars (taste and value for money), then the wine's aroma and flavour profile is checked again and Delinat works with the wine-maker on possible optimization. In particular, the selection of grape types, the fermentation and maturation process, containers (steel, wooden barrels), fining and filtering are reviewed and new variants are developed until both experts and customers rate the wine as good. Where this process fails, the wine is removed from the Delinat range.

6. Transparency

Delinat communicates all product details with complete transparency. Information that is publicly accessible online includes:

1 The more than 100 items listed in the directive that are declared by the winegrower
2 Chemical analysis results
3 Tasting memoranda
4 Customer assessments
5 Delinat certification

The implementation of the Delinat guidelines is controlled and certified annually at all levels by the accredited Swiss control and certification body bio.inspecta AG. There is free access to Delinat certificates of all Delinat farms and their certification status via the online portal easy-cert.com. bio.inspecta AG is accredited as a certification body by the Swiss Accreditation Service (SAS) in accordance with ISO/IEC 17020 and ISO/IEC 17065.

Delinat certificate query: website www.bio-inspecta.ch →online tools →query certificates or via the certificate database www.easy-cert.com →certificates, companies.

7. Allergens

In conventional processes, wine comes into contact with substances that are considered as allergens. Egg white, dairy products, animal gelatin, and isinglass are just some of them. To offer wine connoisseurs free choice, Delinat declares all these substances in detail. For vegans, allergy sufferers and others who have to or want to avoid animal additives, it is so easy, with the right search filters, to find the desired wines on the Delinat website. A special case is histamine (and other biogenic amines). This substance is not added to the wine, but arises after alcoholic fermentation under bacterial influence. Delinat checks all wines for histamine and does not accept wines having above 14 mg/litre.

8. Monitoring/Outcome analyses

In order to assess the effect of the requirements contained in the guidelines, Delinat regularly gathers information on

- the overall growth of cultivated areas in general
- the portion of surfaces with permanent green cover
- the number of biodiversity elements like hotspots, bushes and trees
- the growth of ecological compensation areas by increasing the number of undertakings or areas under cultivation

and publishes this information in the form of press releases.

Appendix

11. Definitions

11.1 Glossary

Auxiliary substances (external production aids)
Natural products may be used as auxiliary substances in winegrowing and winemaking. In general, the regulations applicable in the country of production apply to such auxiliary substances. However Delinat reserves the right to limit the use of certain products (e.g. copper compounds) or even to ban them completely (e.g. mineral fertilisers). The list of approved products contained in the valid version of the EU Organic Farming Regulation and the processes tolerated in these guidelines constitute the basis.

Chemical products
Chemical products (as opposed to natural products) are considered to be:
- Substances industrially created by chemical reactions,
- Chemical-based synthetic substances.

Certificate of exemption (CE)
Under certain circumstances strictly specified in these guidelines, a winegrower may apply to Delinat-Consulting for an exemption. When accepted, an exemption is always provided in written form. The document must be available for presentation on any inspection.

Climate positive
We speak of a climate-positive effect if humus is built up through various measures (and thus CO2 is stored in the soil), and the energy used for this purpose comes from renewable sources.

Climate-preserving management methods
Delinat undertakings are required to focus their management methods on the goal of maximizing climate protection. This is achieved by:
(a) reducing fossil fuel consumption,
(b) compensating fossil fuel use with renewable energies (calculation basis = energy equivalent), and
(c) replacing electricity from fossil or nuclear power plants with electricity from renewable sources (wind, sun, water, wood, etc.). The renewable energy is produced as far as possible on site.

Comprehensive coverage
The whole winemaking company or business including all its sales-oriented production activities (even those not specifically connected with winegrowing) are bio-certified.

Conversion
The transition from non-ecological/non-organic viniculture to ecological/organic viniculture within a specified period of time. In this period the regulations governing ecological/organic production methods are already applied in full.

Delinat Consulting

Delinat Consulting is a division of Delinat, set up to provide Delinat winegrowers with professional support in their wine making. Activities range from exchange of proven expertise to the commissioning of research. The transfer of knowledge between Delinat winemakers has proven to work very well. Delinat Consulting coordinates the trials being undertaken by Delinat winegrowers and accompanies their implementation. Gathering, compiling, documenting and passing on all this knowledge and experience is part of the core task of Delinat Consulting. Delinat winemakers are visited and advised annually by a Delinat consultant. There are also annual meetings to which all Delinat winemakers are invited. Burning issues can be clarified at any time directly with Delinat Consulting consultants, while fact sheets on major questions are available on www.delinat.com/consulting.

Delinat grades (or seals of quality)

Wines produced in accordance with these guidelines are labelled with a Delinat seal of quality. There are three grades, indicating the progress made towards achieving the Delinat targets. Guideline compliance is monitored by independent third-party auditors commissioned by Delinat. The grade 1 Delinat snail serves as the basis and starting point for further development towards grades 2 and 3 Delinat snails.

EU Organic Farming Regulation

The respective version of the EU Organic Farming Regulation on ecological/organic production methods valid at the time the Delinat guidelines are published.

GMO
Abbreviation for "genetically modified organism". According to the EU Organic Farming Regulation, GMOs or products created with their help are not allowed in organic farming. A similar ban on all genetically engineered products also applies to these guidelines.

Ionising radiation
Ionising radiation consists of subatomic particles or electromagnetic waves that are energetic enough to detach electrons from atoms or molecules, ionizing them. Ionisation can be used to conserve foods.

Inspection and certification body
An independent private third party responsible for inspection and certification of ecological/organic production methods. The body itself has an **ISO/IEC 17065:2012** certification.

Nanotechnology
The use of chemically or mechanically produced agents with structures 100 nanometres or smaller.

Natural products
Natural products have a plant, animal or mineral origin and are gained from nature by appropriate processes.

Organic winegrowing
Organic winegrowing is a form of wine production using solely natural means of regulating growth and natural or quasi-natural auxiliary substances to produce grapes and wine. There is a further focus on providing all people working in the vineyards and cellars with adequate working and living conditions. These principles apply to the whole winegrowing company or business.

Regenerative agriculture

The goal of regenerative agriculture is to create a resilient farming system. The purposeful combination of factors such as site climate, humus build-up, plant and animal biodiversity and the water cycle should lead to an efficient and sustainable agricultural cultivation system without the use of pesticides. The adoption of these principles in the vineyard ecosystem targeted by Delinat has multiple effects: On the storage of CO2 in the soil with a positive effect on the climate balance, on improved water infiltration and storage capacity of the soil, on stabilization of soil aggregates, which leads to less erosion, on the creation of a high biodiversity within the vineyard. The fundamental aim is to create the most efficient, small-scale, diverse and closed cycles possible. The result is a resilient cultivation system that is characterized by high resistance to extreme climatic situations, rapid regeneration capacity and strong plant health. Regenerative agriculture integrates concepts from permaculture, agroecology, holistic pasture management and agroforestry / vitiforst (vines and (fruit) trees).

Vegan

From 2017 onwards, the Delinat guidelines will exclude all processing agents of animal origin (chicken protein, dairy products, gelatine etc.), and prohibit fertilizers containing slaughter waste. In this way Delinat wines comply with the international Vegan definition and can be declared vegan from 2017 onwards without exception.

11.2 List of Annexes

CuS
Copper/Sulfur table

Cert
Certification of former vintages (German language only)

11.3 Guideline tables

Hereinafter, the overall guidelines are specified in list form. The list forms the basis for the self-declaration of the winegrowers and also corresponds to the check points of the operation assessment, which are examined by the control authorities.

1.1 Cover crops for vineyards

1774	Seeded or spontaneous vegetation covering the whole area under cultivation for at least 6 months in between 1st August and 30th April (time of winter rest).	●	●	●
1778	During the six month winter rest period, the aisles may be worked only for seeding purposes or for a single deep-tilling of the soil without damaging the soils surface.	●	●	●
1777	Minimum proportion of year-round vegetative soil coverage in% of the vineyard area per hectare regularly distributed (certificate of exemption).	10	30	50
1779	Minimal partial area in % of the vineyards surface distributed regularly on every hectar as a bloom area. Bloom areas can't be mulched or mown before 1st july.	10	10	10
1775	Treated seed is forbidden.	●	●	●
1776	Herbicides are forbidden.	●	●	●

1.2 Soilwork

1780	Working the soil at depths of 10 cm or more is prohibited for vines in production.	●	●	●

1.3 Fertilising

1783	Solely bioactive fertilisers are to be used: compost, compost extract, herbal mixtures, green manure crops, mulch, wood chippings or cattle manure composted for at least one year with or without added rock flour.			●
1781	Synthetic mineral fertilisers and soil conditioners are forbidden. Only organic fertilisers (as specified in EU Regulation 889/2008 App. 1) are allowed. Permitted are rock flour and natural lime products such as algae lime, shell limestone, carbonate lime, limestone marl, chalk or limestone.	●	●	●

1782	Organic fertilizers with the addition of N, P or K fertilizers as well as manure slurry, waste compost or sewage sludge are forbidden.	●	●	●
1784	Vine cuttings remain in the vineyard (certificate of exemption possible).	●	●	●
2029	The use of guano is not allowed.	●	●	●

1.4 Intensity of applying fertilisers

		๑	๑๑	๑๑๑
1917	Permitted are rock flour and natural lime products such as algae lime, shell limestone, carbonate lime, limestone marl, chalk or limestone.	●	●	●
1790	Vine cuttings remain in the vineyard. (Certificate of exemption possible)	●	●	●
1791	Maximum amount in tons of compost per hectare for 3 years	35	35	35
1792	Maximum amount in tons of compost per hectare as a one-off measure for soil regeneration	140	140	140
1785	Nitrogen (N) to be applied solely in its biologically fixed form (kg/ha/3 years)	150	125	100
1786	Phosphate (P2O5) to be applied solely in its biologically fixed form (kg/ha/3 years)	60	50	40
1787	Potash fertiliser (K2O) to be applied solely in its biologically fixed form (kg/ha/3 years)	225	200	150
1788	Magnesium fertiliser (Mg) to be applied solely in its biologically fixed form (kg/ha/3 years)	75	60	50

1793	Slaughter waste (horn meal, bone meal, blood meal, etc.) and products containing slaughterhouse waste are prohibited. This applies to both direct application in the fields and mixing in with compost.	●	●	●
	1.5 Foliar fertilisers and plant fortifiers	@	@@	@@@
1794	Organic and Mineral Foliar Fertilizers (Zn, Fe, Mn, B...) are approved according to EU-DVO 889/2008.	●	●	●
	1.6 Irrigation and water retention	@	@@	@@@
1918	When irrigating, (permaculture-)measures must be taken to improve water retention in the soil.	●	●	●
1922	If irrigation is above ground, it should only be carried out at night so that less water evaporates (certificate of Exemption (CE) possible with detailed explanatory statement).	●	●	●
	2.1 Ecological compensatory areas	@	@@	@@@
1795	Ecological compensation area totally at least 12%, of which 7% in or neighbouring the vineyard. 5% might be disconnected, all the areas lying within 1000 m can be accounted. The areas must be marked on the large-scale land map of the vineyards. Certificate of exemption needed if less than 7% are neighbouring.	●	●	●
1796	Burning off scarps, bushes, hedges and the edges of the vineyard is forbidden.	●	●	●
	2.2 Structural diversity and vertical biodiversity	@	@@	@@@
1798	Max. number of vine-planted hectares per biodiversity hotspot with a tree (a contiguous area of at least 30 m2) on the rim or in the middle of the vines	5	3	1
1799	Max. distance of a vine to the next tree in metres	300	150	80
1797	Minimum number of bushes per hectare in the middle or within 15 meters on the rim of the vines	10	20	40

2030	Structural elements per hectare: Nest boxes for birds and bats, perches for birds of prey, insect hotels, cairns, branch piles, water areas, etc.	2	2	2

3.1 Pesticides

		@	@@	@@@
1800	The use of industrially produced chemical pesticides/fungicides is forbidden. Products of plant origin (herbal manure, teas) and lecithin are permitted, as is potassium hydrogen carbonate to reduce the wet sulphur levels.	●	●	●
1803	Grapes contaminated by pesticide drift must be picked, processed and labelled separately.	●	●	●
1801	Max. amount of metallic copper in kg per hectare and year. (Certificate of exemption possible)	3.1	2.6	2.1
1804	Five years' amount of metallic copper per hectar, sum for 5 years. (For excesses of up to 0. 4 kg at level 1D an exemption certificate is required!)	16.4	13.9	11.4
1802	Max. amount of sulphur (wet and dry) in kg per hectare and year. (Certificate of exemption possible)	66	33	22
1805	Five years' amount of sulphur per hectar, sum for 5 years. (For excesses of up o 20 kg at level 1D an exemption certificate is required!)	357	178	128
2033	Proportion of fungus-resistant varieties.	●	●	●
2034	From 2023 onwards, in case of non-achievement of 2D due to too high copper or sulphur levels both in the current year and in the 5-year average, the share of fungus-resistant grape varieties must be increased by 1 percentage point of the total vineyard area for each year of non-achievement.	●		

3.2 Harmful insects and animals

		@	@@	@@@
1806	Permitted substances are bacterial preparations (as listed in App. II of EU Reg 889/2008), pheromone traps (always to be accompanied by proof of necessity) biodynamic preparations as well as potash soap on a vegetable basis.	●	●	●

1809	Pesticides against Drosophila Suzukii and vine cicadas (Empoasca flavescens, Scaphoideus titanus), allowed for organic wine-growing by the statal administrations, can be used with infestation proof and certificate of exemption.	●	●	●
1807	Traps for vertebrates are forbidden.	●	●	●
1808	All decimation measures is forbidden.	●	●	●

5.1 Wine-making

		@	@@	@@@
1833	Not permitted: machine-harvesting			●
1823	Not permitted: nonstop crushing	●	●	●
1824	Not permitted: vacuum evaporators, reverse osmosis and cryoextraction	●	●	●
1919	Not allowed: centrifugation	●	●	●
1838	Permitted: addition of SO2 to mash before alcoholic fermentation.	●	●	●
1839	Maximum addition of vegetable charcoal solely to must or mash in grams per hectolitre	60	60	60
1825	Maximum enrichment in % abv of grape must by adding bioorganic sugar or equivalent amount of bioorganic concentrated grape must (see also sparkling wine). Applies to the finished wine (also assemblages).	1	1	0
1837	Sparkling wines: maximum enrichment in % abv of grape must by adding bioorganic sugar or equivalent amount of bioorganic concentrated grape must.Enrichment up to 2% abv only with Certificate of exemption. Applies to the finished wine (also assemblages).	1	1	1
1831	Not permitted: warming the mash over 35 degrees C			●
1840	Not permitted: the addition to wine of grape must, grape must concentrate or rectified grape must concentrate (so-called sweet reserve) with EU or CH bio certificate for rounding wines before bottling			●

1841	Permitted: braking fermentation by chilling ("méthode ancestrale")	●	●	●
1830	Ascorbic acid is forbidden.	●	●	●
1834	The following forms of SO2 are the only ones permitted: 100% pure gas, 5-25% watery solution, potassium metabisulfite (50% S), sulphur wicks (only for conserving empty barrels).	●	●	●
1827	Aromatisation using wood staves, chips or powder is forbidden	●	●	●
1828	Pure yeast cultures and pectolytic enzymes are forbidden.			●
1829	Traditional bacterial cultures are forbidden			●
1920	Not allowed: yeasts cultivated using petrochemical or chemical-synthetic products.	●	●	●
1826	The undeclared use of aroma-giving additives is forbidden	●	●	●
1835	Not permitted: deacidification using calcium carbonate (CaCO3)			●
1836	Maximum amount for acidification using tartaric acid (E 334) > in g/l. Applies to the finished wine (also assemblages).	2	1	0
1832	Not permitted: the use of citric acid for acidification	●	●	●

5.2 Stabilisation, Adjuvants, Filtration

		๑	๑๑	๑๑๑
1842	Max. values for free SO2 in white and semi-sparkling wines with less than 5 g/l rest sugar (at the time of sale)	30	28	25
1843	Max. values for total SO2 in white and semi-sparklingwines with less than 5 g/l rest sugar	100	90	80
1925	Max. values for total SO2 in white wine with at least 18 months of maturation in barrels with less than 5 g/l rest sugar	120	110	100
1869	Max. values for free SO2 in rosé wines with less than 5 g/l rest sugar (at the time of sale)	30	28	25
1848	Max. values for total SO2 in rosé wine with less than 5 g/l rest sugar	100	90	80
1844	Max. values for free SO2 in red wine with less than 5 g/l rest sugar (at the time of sale)	30	25	20
1849	Max. values for total SO2 in red wine with less than 18 months of maturation in barrels with less than 5 g/l rest sugar	80	70	60

1861	Max. values for total SO2 in red wine with at least 18 months of maturation in barrels with less than 5 g/l rest sugar	95	85	75
1845	Max. values for free SO2 in sparkling wine with less than 5 g/l rest sugar (at the time of sale)	30	25	20
1850	Max. values for total SO2 in sparkling wine with less than 5 g/l rest sugar	80	70	60
1867	Max. values for free SO2 in wine and sparkling wine with 5 - 40 g/l rest sugar (at the time of sale)	40	38	35
1847	Max. values for total SO2 in wine and sparkling wine with 5 - 40 g/l rest sugar	125	115	105
1846	Max. values for free SO2 in sweet wine with more than 40 g/l rest sugar (at the time of sale)	45	43	40
1851	Max. values for total SO2 in sweet wine with more than 40 g/l rest sugar	180	170	160
1855	Permitted: bentonite	●	●	●
1857	Permitted: silicon dioxide/silicic gel	●	●	●
1852	Not permitted: Egg protein and egg white, animal gelatine.	●	●	●
1854	Not permitted: Dairy products	●	●	●
1864	Permitted: Storage under inert gas N2, CO2, Ar	●	●	●
1865	Permitted: Fining wines using lees from your own cellar or from other organic producers	●	●	●
1853	Not permitted: vegetable gelatine			●
1856	Not permitted: tannin			●
1858	Not permitted: gum arabic		●	●
1859	Permitted: carbonic acid for sparkling wine and flotation.	●	●	●
1863	Not permitted: biologically certified yeast nutrients based on yeast cell wall, yeast autolysates and inactivated yeasts.			●

1862	Not allowed: any other auxiliary or aromatic substances not listed here	●	●	●
1860	Not permitted: microfiltration < 0,2 micrometre	●	●	●
1868	Permitted: perlite	●	●	●
1866	Permitted: diatomite	●	●	●
1870	Permitted: asbestos-free cellulose	●	●	●
1921	Wines that have either not been filtered or filtered with a minimum pore size of 10 microns, are considered "unfiltered".	●	●	●

5.3 Origin of the grapes / blending

		@	@@	@@@
1871	Not permitted: the use of contaminated grapes	●	●	●
1872	When blending different quality wines, the lowest quality in all criteria determines the wine's quality.	●	●	●

5.4 Storage / cleaning

		@	@@	@@@
1873	Cleaning agents containing industrially produced chemical pesticides are forbidden.	●	●	●
1874	Cleaning agents containing chlorine or eau de Javel are forbidden. Exemption: cleaning of fix installations (tubes, vats) once a year.		●	●

5.5 Bottle sealing

		@	@@	@@@
1875	Not permitted: the sterilization of corks by irradiation. Use of chlorine washed corks, of coloured corks and of colmated corks. Cork agglomerates of all kinds such as pressed corks made from cork powder or coarse cork particles which are bonded with synthetic adhesive and/or contain microspheres (DIAM System). Likewise Twintop corks (agglomerate cork, fitted with a disk of natural cork at the ends). Plastic stoppers of every kind.	●	●	●
2032	Not allowed: Glass stoppers.	●	●	●
1876	Permitted: Screw caps with saran-tin, saranex or other plastic seals.	●		

1877	Not permitted: natural corks, washed in the traditional way with hydrogen peroxide and bleached, neutralized with sulphuric acid and then coated with wax and/or silicone.			●
1878	Permitted: natural corks, which have not been bleached and have been washed exclusively with sodium hydroxide solution, neutralized with citric acid or other natural acids and then coated with vegetable oil, natural waxes, resins or similar natural products, guaranteed to cause less than 2% cork taint, and printed with the Delinat logo on top. Also allowed: classic champagne corks.			●
1879	Permitted: cahmpagne corks (agglomerate corks with the wine end protected with at least two 5mm disks of natural cork)	●	●	●

6.1 Social standards

1810	Any form of forced labour is prohibited. The withholding of ID papers, personal property or wages for the purpose of preventing an employee leaving the company is forbidden.	●	●	●
1811	Child labour is forbidden.	●	●	●
1812	All forms of discrimination are forbidden.	●	●	●
1813	Wages below the statutory national minimum wage and wage cuts as a disciplinary measure are forbidden.	●	●	●
1814	Working hours longer than those set by national legislation and standards are forbidden. Also forbidden is the non-compensation or the lack of any adequate reimbursement of overtime.	●	●	●
1815	Overtime must be reimbursed by compensatory payments.	●	●	●

6.2 Employment contracts, safety, rights

1816	The employment of staff without contracts is forbidden when no valid cause is evident.	●	●	●
1817	Employees are to be instructed about all potential health and accident risks.	●	●	●
1818	All employees must be provided with sufficient and adequate protective clothing.	●	●	●

1819	All employees must have access to decent accommodation and hygienic facilities.	●	●	●
1820	All employees must have access to healthcare.	●	●	●
1821	All employees are to be given an unlimited right of assembly.	●	●	●
1822	Any discrimination of employees due to trade union membership or activities is forbidden.	●	●	●

7.1 Cultivation records

1880	Obligatory entry in company journal: when and how much seed used	●	●	●
1881	Obligatory entry in company journal: when and how much fertiliser applied	●	●	●
1882	Obligatory entry in company journal: when and how the soil is worked	●	●	●
1883	Obligatory entry in company journal: when, how and how much watering is done, and source of the water	●	●	●
1884	Obligatory entry in company journal: when, how and how many plant protection measures are applied	●	●	●
1885	Obligatory entry in company journal: Maps and/or aerial photographs of all plots overview), with clear delineation of plots as per the plot list, with ecological compensation areas, conventionally-cultivated neighbouring areas, hotspots, distance of the vines to the nearest tree, bushes up to 15m to the vines.	●	●	●
1886	Obligatory entry in company journal: Plot list: clear plot identification (number or name) of all plots, with size, EU organic-transition since, EU organically certified since, Delinat-certified since, Delinat in biodiversity transition since (only for new areas, maximum 5 years).	●	●	●

7.2 Processing records

1887	Delinat list of products is available and complete.	●	●	●
1888	Delinat wine journal is available and complete.	●	●	●
1889	Delinat list of suppliers is available and complete.	●	●	●

1890	On delivery notes and/or bills the Delinat quality grade of delivered Delinat greenware is noted correctly.	●	●	●
1891	Suppliers for Delinat grapes or wines are recognised for the delivered Delinat quality grade.	●	●	●
1892	Applied auxiliaries are documented in the wine journal.	●	●	●

8.2 Energy

		@	@@	@@@
1923	The share of renewable energy produced on the farm (share of the total energy demand for field and cellar) must be as high as possible, but at least 30%.	30	60	100
1926	Until the 100% renewable energy target is achieved, each undertaking will also demonstrate that it has taken at least three measures to implement energy efficiency.	●	●	●
1907	Diesel and petrol are to be replaced as fossil motor fuels	0	0	0
1908	Natural gas is to be replaced as a fossil motor fuel and as heating fuel.	0	0	0
1909	Heating oil, as a fossil fuel, is to be replaced.	0	0	0
1927	Liquid gas is to be replaced as a fossil motor fuel and as heating fuel.	0	0	0
1910	Energy is to be used efficiently.	0	0	0
1911	In the long term, electricity is to be generated on-site from renewable sources (e.g. photovoltaic).	0	0	0
1912	In the long term, electricity is to be generated on-site from renewable sources (e.g. wind energy).	0	0	0
1913	In the long term, electricity is to be generated on-site from renewable sources (e.g. hydroelectricity).	0	0	0

1914	In the long term, electricity is to be generated on-site from renewable sources (e.g. hydroelectricity). Where insufficient possibilities exist, the undertaking can participate in photovoltaic and wind energy generating plants within a 100 km radius (special permit possible).	0	0	0

8.3 Disposal

1903	Winerys sewage is treated by a sewage treatment plant or national regulations governing cellar effluent are respected.	●	●	●
1904	Correct disposal of spraying rests. Copper or sulphur sprays may not be disposed of neither on fields nor into drains.	●	●	●
1905	Correct separating, recycling and disposal of every kind of waste from field and cellar	●	●	●
2031	Binding materials must be biodegradable.	●	●	●

8.4 Promotion of rare species

1906	Minimal 2 mesures to protect and promote rare, endangered and valuable livestock or wild animals and cultivated or wild plants in similar categories.	●	●	●
1915	Invasive neophytes: Delinat winegrowers are required to take the necessary measures to recognize such plants, to remove them and to prevent them from spreading.	●	●	●
1916	A ‘red list’ is maintained of rare indigenous species, and measures taken to resettle them. Progress is to be recorded year by year.	●	●	●

9.1 The Delinat quality grades

1893	The whole company, including all commercial production units belonging to it, is operated in an organic manner and is subject to monitoring and certification.	●	●	●
1894	The inspection body may not be changed without prior disclosure of the reasons and a written communication to Delinat-Consulting.	●	●	●
1895	The use of GMO products or products produced using GMO is forbidden.	●	●	●

1896	Nanotechnology: the use of synthetic particles in the nanometer range (<100 nm) is forbidden (e.g. as an additive, for packaging, as a pesticide, fertiliser, cleaning agent or filter).	●	●	●
1897	The use of ionising radiation and ionised products is forbidden.	●	●	●
1898	Compliance with the EU/Swiss Organic Farming Regulation (annual inspection and certification by a respective monitoring body).	●	●	●
1899	The fully completing of the company declaration form.	●	●	●
1900	The actual guidelines are in the company and the companys manager is acquainted with it.	●	●	●
1902	Conformity with local, regional and national legislation is obligatory.	●	●	●
1901	Annual advanced training observed by attending Delinat seminaries and/or by visit of the company by a Delinat consultant.	●	●	●
1924	The entire vineyard area of a farm must be cultivated according to Delinat guidelines.	●	●	●

CuS

DELINAT

	Cu						S					
	@		@@		@@@		@		@@		@@@	
kg/ha	annual	5-years	annual	5-years	annual	5-years	annual	5-years	annual	5-years	annual	5-years
2019	3.4	17.0	2.9	14.5	2.4	12.0	75	375	37	185	28	140
2020	3.3	16.9	2.8	14.4	2.3	11.9	72	372	36	184	26	138
2021	3.2	16.7	2.7	14.2	2.2	11.7	69	366	35	182	24	134
2022	3.1	16.4	2.6	13.9	2.1	11.4	66	357	33	178	22	128
2023	3.0	16.0	2.5	13.5	2.0	11.0	63	345	32	173	20	120
2024	2.9	15.5	2.4	13.0	1.9	10.5	60	330	30	166	18	110
2025	2.8	15.0	2.3	12.5	1.8	10.0	57	315	29	159	17	101
2026	2.7	14.5	2.2	12.0	1.7	9.5	54	300	27	151	16	93
2027	2.6	14.0	2.1	11.5	1.6	9.0	52	286	26	144	15	86
2028	2.5	13.5	2.0	11.0	1.5	8.5	50	273	25	137	14	80
2029	2.4	13.0	1.9	10.5	1.4	8.0	48	261	24	131	13	75
2030	2.3	12.5	1.8	10.0	1.3	7.5	46	250	23	125	12	70
2031	2.2	12.0	1.7	9.5	1.2	7.0	44	240	22	120	11	65
2032	2.1	11.5	1.6	9.0	1.1	6.5	42	230	21	115	10	60
2033	2.0	11.0	1.5	8.5	1.0	6.0	40	220	20	110	10	56
2034	2.0	10.6	1.5	8.1	1.0	5.6	40	212	20	106	10	53
2035	2.0	10.3	1.5	7.8	1.0	5.3	40	206	20	103	10	51
2036	2.0	10.1	1.5	7.6	1.0	5.1	40	202	20	101	10	50
2037	2.0	10.0	1.5	7.5	1.0	5.0	40	200	20	100	10	50

Zertifizierungsverfahren für rückwirkende Anerkennung

Wenn ein Winzer eine nachträgliche Delinat-Zertifizierung möchte, müssen folgende Kriterien erfüllt sein:

Delinat-Zertifzierung
Delinat definiert den Standard, bio.inspecta garantiert, dass er eingehalten wird.

4-Fragen-Prinzip
Wenn keine dieser 4 Fragen mit NEIN beantwortet werden muss, dann kann der Wein Delinat-zertifiziert werden:

1. War das Weingut im Anbaujahr bio-zertifiziert (nicht unbedingt Delinat-zertifiziert)?

2. Falls im Anbaujahr bio- und nicht Delinat-zertifiziert:
   war das Gut in den 4 Jahren vor dem Anbaujahr NIE, aber im Einkaufsjahr Delinat-zertifiziert?

3. War das Weingut zwischen Wein-Jahrgang und Einkaufsjahr mindestens einmal Delinat-zertifiziert?

4. Erfüllt der Wein alle Anforderungen der zur Zeit des Jahrgangs gültigen Delinat-Richtlinien?
   - Alle vier Fragen sind im individuellen Fall leicht, eindeutig und ohne nennenswerten Aufwand zu beantworten.
   - Die ersten drei basieren auf Stammdaten, die sowohl bei bio.inspecta wie auch bei Delinat gespeichert sind.
   - Frage 4 setzt sich aus der Selbstdeklaration des Winzers und aus der Analytik von Delinat zusammen.
     → Die Antwort muss im konkreten Fall vollständig vorliegen.

Beispiele		Einkaufsjahr							
Jahrgang	**Hof**	2011	2012	2013	2014	2015	2016	2017	2018
2011	konv								
2012	EU-bio			A	A		A	A	
2013	1D			X	X	E	X	X	E
2014	1D				X	E	X	X	E
2015	EU-bio								
2016	1D						X	X	E
2017	2D							X	E
2018	konv								

Leer = Wein erhält kein Delinat-Zertifikat, A, E und X = Wein wird Delinat-zertifiziert.

Fall A: Anfang: Im Weinjahrgang war Hof nur EU-zertifiziert, später wurde Hof Delinat-zertifiziert

Fall E: Ende: Im Weinjahrgang war Hof Delinat-zertifiziert, aktuell ist Hof aber nur EU- oder nicht zertifiziert

Fall X: Im Weinjahrgang und im Einkaufsjahr war und ist Hof Delinat-zertifiziert

1. Motivationsbonus zu Beginn (Fall A)

Um den Beginn der Delinat-Zertifizierung zu erleichtern und die Motivation zur Umstellung zu fördern, werden ab dem Jahr der ersten Delinat-Hof-Zertifizierung auch frühere Jahrgänge mit EU-Bio als Delinat-Weine zertifiziert. Solche Weine müssen aber natürlich wie alle anderen sämtliche Delinat-Anforderungen erfüllen (Ausbau, SO_2, usw.). Der einzige Unterschied liegt in der Hof-Zertifizierung, es zählt das Einkaufsjahr, nicht der Jahrgang. Diese Regelung gilt nur beim ersten Einstieg in die Delinat-Zertifizierung, nicht aber nach einer Unterbrechung.

2. Einfrieren der letzten Zertifizierung (Fall E)

Wird die Delinat-Zertifizierung des Weinguts nicht mehr erreicht, gilt zur Beurteilung der älteren Jahrgänge das zuletzt gültige Delinat-Zertifikat.

3. Berechnung der Schnecken

– Es gilt immer die aktuellste Hof-Zertifizierung und -Deklaration
– Es gilt immer die Wein-Deklaration des Jahrgangs (gemäss den zum Jahrgang gültigen Richtlinien)
– Die tiefere Schnecken-Zahl zählt

4. Mehrjahreslimiten

Beim Überschreiten der 5-Jahreslimiten (Kupfer, Schwefel) wird das Delinat-Zertifikat aberkannt. Wird das Zertifikat weiter angestrebt, dann wird der Hof weiter kontrolliert und die 5-Jahresmengen lückenlos weiter berechnet. So bald die Mengen das Maximum nicht mehr überschreiten, kann wieder zertifiziert werden.

Wird die Kontrolle abgebrochen und der Hof kommt später zurück in die Zertifizierung, müssen die 5-Jahres-Werte von Anfang an erfüllt werden (im Unterschied zu neuen Höfen, bei denen der Zähler bei null startet).

5. Zeitpunkt
Da der Hof jeweils erst ab September deklariert und kontrolliert wird, gilt bis dahin jeweils das Hof-Zertifikat des Vorjahres. Das ist in der Matrix oben zu berücksichtigen (bis zur neuen Hof-Deklaration gilt das Vorjahr).