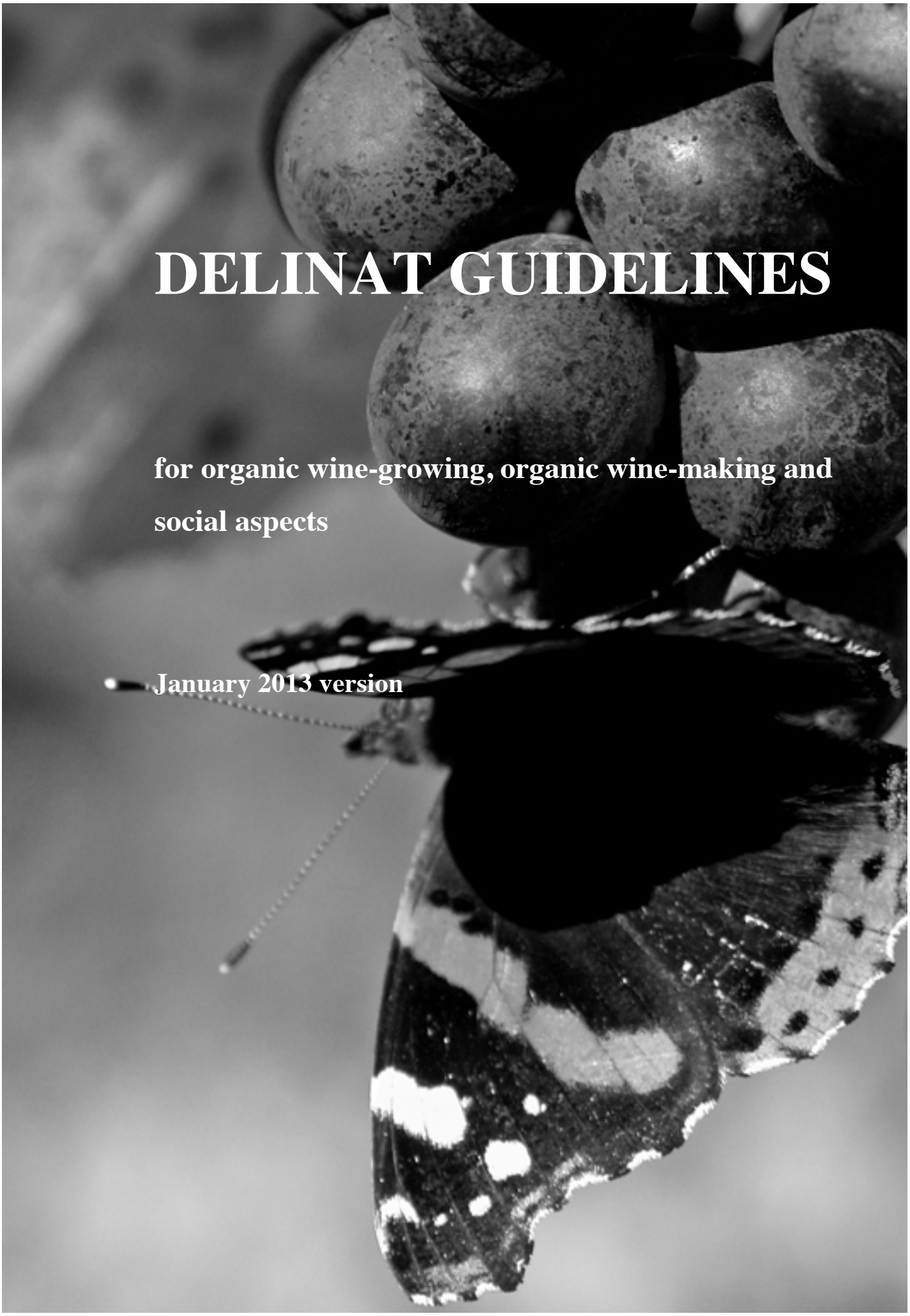

DELINAT GUIDELINES

for organic wine-growing, organic wine-making and social aspects

January 2013 version

DELINAT
Biowein aus gesunder Natur

Imprint

These guidelines replace the guidelines of 2007.

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Delinat organic winegrowing guidelines 2013

‹New paths are created by treading them› Franz Kafka

The new Delinat guidelines have been compiled to support winegrowers in their efforts to operate their vineyards without negative effect on the climate and to attain such a high level of biodiversity within their vineyards that the cultures themselves become ecological compensation areas.

The new 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 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.

Cultivation

1. PREPARING THE SOIL AND USING FERTILISERS

1.1. Cover crops for vineyards

Objective

To have the whole vineyard 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 plants live in an efficient symbiosis with all micro-organisms via roots, 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 and biochar. 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 micro-organisms 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 Institute can provide support in selecting seed and its inoculation with beneficial soil micro-organisms.

The best way to protect your soil from erosion, evaporation, biological depletion and losses of nutrients is to have the vineyard covered by a cover crop the whole year round, regardless of whether it is located in a region with higher rainfall or in one with no summer rainfall at all in summer. 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 to protect the soil from drying out. In the latter 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 and used at least in every second aisle. 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 at least every 20th/7th/3th aisle to have an all-year cover crop, covering at least half the aisle. 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 soil be covered with a cover crop strip at least half an aisle wide at the given minimal intervals
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 3 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.

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 flower strips such as embankments are present in the vineyard, at least every 20th row has to be sown as a flower strip and not 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.

COVER CROP FOR VINEYARDS			
Seeded or spontaneous vegetation covering the whole cultivated area for at least 6 months between 1 August and 30 April (winter rest).	●	●	●
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 soil surface.	●	●	●
Maximum number of consecutive aisles without a cover crop (CE).	19	6	2
At least one aisle in 20 has to be covered with a flower strip and not mulched or mown before 1st July.	●	●	●
Treated seed is forbidden.	●	●	●
Herbicides are forbidden.	●	●	●

1.2. Soilwork

Objective

To minimise all working of the soil and the use of heavy machinery.

Background

Any working of the soil disturbs and endangers the biological network in the ground. 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. 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. Clearing plants from underneath the vines and deep loosening are tolerated. Deep ploughing is forbidden, and 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. A rolojack (www.rolojack.com) is particularly suitable for such rolling, as it bends the crop over without cutting it and without separating it from its roots. The result is that the flow of juice to the plant stalks is greatly slowed down without the plant dying. The roots stay firmly in the ground, without immediately developing new ones. The rolled cover crop dries very slowly, providing excellent soil cover protecting against evaporation, sun and strong rainfall during the dry season. Even in very hot weather, the ground remains moist and cool.

SOILWORK			
Working the soil at depths of 30cm or more is prohibited.	●	●	●

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.

360o 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, wood chippings and biochar, 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.

The use of other mineral-based leaf fertilisers is prohibited.

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.

FERTILISING			
Solely bioactive fertilisers are to be used: compost, compost extract, herbal mixtures, green manure crops, biochar, mulch, wood chippings, bokashi or cattle manure composted for at least one year with or without added rock flour.			●
Synthetic mineral fertilisers and soil conditioners are forbidden. Only organic fertilisers (as specified in EU Regulation 889/2008 App. 1) are allowed	●	●	●
Organic fertilisers with added N, P or K ingredients, or with waste compost, sewage, sludge or untreated slurry, are forbidden.	●	●	●
Vine cuttings remain in the vineyard (CE).	●	●	●

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 completely covered through compost, biochar or wood chippings. Compost contains mineral nutrients bonded organically.
All fertilising should be done in spring to avoid excessive washout rates and in particular high nitrous oxide (laughing gas) and methane emissions effecting the climate.
When any fertilising is planned where the following maximum approved amounts of fertilisers are to be exceeded, a written exemption needs to be given by the Delinat Institute. 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.

INTENSITY OF APPLYING FERTILISERS			
Any non-standard use of fertilisers is forbidden without a soil analysis and an exemption.	●	●	●
Maximum m3 compost per hectare for 3 years.	50	50	50
Maximum of n m3 compost per hectare as a one-off measure for soil regeneration.	200	200	200
Nitrogen (N) to be applied solely in its biologically fixed form (kg/ha/3 years).	150	125	100
Phosphate (P2O5) to be applied solely in its biologically fixed form (kg/ha/3 years).	60	50	40
Potash fertiliser (K2O) to be applied solely in its biologically fixed form (kg/ha/3 years).	225	200	150
Potash fertiliser (K2O) to be applied with an exemption in its mineral and not biologically fixed form (kg/ha/3 years).	225		
Magnesium fertiliser (Mg) to be applied solely in its biologically fixed form (kg/ha/3 years).	75	60	50
Magnesium fertiliser (Mg) to be applied with an exemption in its mineral and not biologically fixed form (kg/ha/3 years).	75		

1.5. Foliar fertilisers, plant fortifier, foliar fertilisers containing phosphite

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 its pores accumulate however in the plant and its fruit. This is the case with many pesticides whose presence can be subsequently detected in the wine. The same is true for foliar fertilisers containing phosphite, which are allowed in a few countries even in organic farming. As yet phosphonic acid has not been proved to have any negative health effects, but even so it does not belong in organic wine. As long as phosphonic acid is not used after blossom, this is not assimilated in the grapes and cannot in this way reach the wine. For this reason, the use of phosphonic acid is permitted up to blossom, national regulations must be observed.

FOLIAR FERTILISERS, PLANT FORTIFIERS, FOLIAR FERTILISERS CONTAINING PHOSPHITE			
Mineral foliar fertilisers are forbidden. Exemptions may be granted for epsomite in Grade 1.	●	●	●
Phosphonic acid is forbidden after the blossom.	●	●	●

1.6. Irrigation

Objective

To avoid watering grape-producing vines, thereby preventing groundwater reserves from being used up and guarding against soil salinisation.

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. Only young vines (within three years of planting) should be watered.

Any watering of grape-bearing vines must be recorded in a watering journal, with details of the amount, duration and method as well as the source of the water used.

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

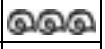
The predominant monocultures currently found in vineyards lead to a weakening of ecosystems. One particular result of this is a greater susceptibility to plant pathogens such as oidium, peronaspora and other pests such as vine moths. Through the systematic introduction of biodiversity in areas given 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 7% of the total wine-growing area, and should be interlinked, not just within the vineyard, but also 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. Vineyards cultivated in accordance with the Charter for Biodiversity fulfil all criteria applying to ecological compensatory areas.

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. The ecological compensatory areas must be right next to the wine-growing areas. If this stipulation cannot be fulfilled, it has to be applied for a special approval at the Delinat Institute. All exemptions must be compensated by measures listed in the Charter for Biodiversity, whereby the measures to be taken are agreed upon in consultation with the Delinat Institute.

ECOLOGICAL COMPENSATORY AREAS			
The ecological compensation area has to amount to at least 7% of the vineyard surface and has to be located in or neighbouring the vineyard. The areas must be marked on the large-scale land map of the vineyards. CE needed if areas do not neighbour.	●	●	●
Burning off scarps, bushes, hedges and the edges of the vineyard is forbidden.	●	●	●

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 10 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.

STRUCTUARAL DIVERSITY AND VERTICAL BIODIVERSITY			
Max. number of vine-planted hectares per biodiversity hotspot (with a tree) in the middle of the vines (a contiguous area of at least 30 m2).	5	3	1
Max. distance of a vine to the next tree in metres.	500	300	80
Min. number of bushes either at the end of rows or in the middle of the vines per hectare.		5	30

3. PLANT PROTECTION

3.1. Pesticides

Objective

To use only organic or bioactive pesticides, found and collected in the vineyard itself. The use of industrially produced sprays such as sulphur or copper should be avoided.

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.

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.

In very unfavourable years, as well as in wine-growing areas with difficult climatic conditions, special approval can be sought from the Delinat Institute to exceed maximum amounts of copper by up to 25%, as long as compensatory measures foreseen in the Charter for Biodiveristy are taken. Such compensatory measures are to be planned together with the Delinat Institute.
The pride of any true wine-grower is harmed when his grapes are only able to survive the ripening phase up to the harvest through the massive use of sprays harmful to both health and nature.

PESTICIDES			
The use of chemical synthetic pesticides is forbidden.	●	●	●
Grapes contaminated by pesticide drift must be picked, processed and labelled separately.	●	●	●
Max. amount of metallic copper in kg per hectare and year (CE)	3.5	3	2.5
Max. amount of sulphur (wet and dry) in kg per hectare and year (CE).	80	40	30

3.2. Measures against 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.
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.

MEASURES AGAINST HARMFUL INSECTS AND ANIMALS			
The only permitted substances are bacterial preparations (as listed in App. II of EU Reg. 889/2008), pheromone traps (always accompanied by proof of necessity) and biodynamic preparations.	●	●	●
Traps for vertebrates are forbidden.	●	●	●
All decimation measures is forbidden.	●	●	●

4. 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 the Delinat Research Institute, 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 the winegrowers certified by the Delinat label.

From 2012 on it will be mandatory, from the 2-snail quality level upwards, for each certified winegrower to carry out at least one representative trial at his vineyard, in order to gain knowledge and experience with which to improve its ecological quality. The set up and objectives of each trial are to be submitted to and discussed with the Delinat Institute by 15 April each year. The Delinat Institute assists with the evaluation and ensures that the results of all trials are made available to the other certified Delinat winegrowers.
Through these trials, a rich collection of new methods and ideas will be built up which will benefit all wine-growers and the organic viticulture of the future.
The trials should be selected according to the interests of the particular winegrower and should address the most crucial problems of the respective vineyards.
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, mulching instead of rolling, 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.)

- SO_2-free wines
(e.g. production in the barrel of a wine without SO2 and other additives)

- Developing an energy supply from renewable, local resources
(Installation of solar panels on wine cellar roofs, wind power, hydropower, energy or water recovery systems)

Each trial should have a control plot or control variant in order to compare the results of the new method with the habitual practice.

TRIAL PROCEDURE			
Conducting a field or cellar trial in consultation with the Delinat Institute.		●	●

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, as machine-picking not only damages the grapes and vines, but also sucks numerous insects and small animals into the wine vats. Moreover, the heavy harvesting machinery together with the additional weight of the grapes compacts the soil. This soil compaction reduces biological activity, weakens the nutrient dynamics and lowers water retention capacity.

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 aromatic 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.

Heating the mash denaturalises the wine, destroying its biological balance. It is therefore not allowed in the Delinat guidelines. If sulphite has already been added to the must, as is still often the case even in organic wine-growing, the result is the loss of the wine's balanced microbial diversity. In one litre of untreated must, there can be up to 1 billion bacteria and yeast cells. In a healthy harvest, these all act in stable harmony, permitting an even, broad-based fermentation process. Adding SO2 destroys this natural balance in the wine, making further manipulation of the wine necessary, pushing the wine towards a standardised taste, and destroying its liveliness. For this reason, the use of SO2 should only take place after or towards the end of the malolactic fermentation.

Yeast 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. When using pure yeast cultures in fermentation, one needs to be aware that they will colonise the whole wine-cellar, also infecting wine where fermentation is taking place without any outside help. At the end of the day the yeast cultures will gain supremacy over the natural yeasts belonging to the vineyard.
The clear and unequivocal goal of Delinat is to arrive at pure natural wines that contain no outside additives and have been subjected neither to mechanical or heat treatment. As this goal has not yet been completely achieved by organic wine-growers, Delinat is trying to promote its development in particular by offering wine connoisseurs a high degree of transparency. For each wine, Delinat offers an online insight into all used additives and ways of processing. Via the Delinat homepage, consumers have unlimited access to this information, enabling them to come to their own conclusions about the wines and to communicate to winegrowers their impressions and wishes. Thanks to this transparency, the consumer can discharge his responsibility as a co-producer alongside the winegrower and the wine merchant.
The winegrower himself is obliged to declare the use of all aromatic and other additives and all winemaking techniques involving machinery or heat. The winegrower's work is transparent and takes the health of his customers into account.

WINE-MAKING			
Not permitted: machine-harvesting.			●
Not permitted: nonstop crushing.	●	●	●
Not permitted: vacuum evaporators, reverse osmosis and cryoextraction.	●	●	●
Enrichment of wine with a maximum of 1% abv by adding bioorganic sugar or equivalent amount of bioorganic concentrated grape must.	●	●	
All enrichment of the grape must is forbidden.			●
Not permitted: warming the mash over 35 °C.			●
The application of sulphur dioxide (SO2) to the must and mash is forbidden. SO2 may only be added after fermentation.			●
Ascorbic acid is forbidden.	●	●	●
The following forms of SO2 are the only ones permitted: 100% pure gas, 5-20% watery solution, potassium metabisulfite (50% S), sulphur wicks (only for conserving empty barrels).	●	●	●
Aromatisation using wood staves, chips or powder is forbidden.			●
Pure yeast cultures and pectolytic enzymes are forbidden.			●
Traditional bacterial cultures are forbidden.			●
The undeclared use of aroma-giving additives is forbidden.	●	●	●
Not permitted: deacidification using calcium carbonate (CaCO3).			●
Maximum amount for acidification using tartaric acid (E 334) > in g/l	2	1	0
Not permitted: the use of citric acid for acidification after wine stabilisation.		●	●
Not permitted: the use of citric acid for acidification before wine stabilisation.	●	●	●

5.2. Stabilisation

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 limits for the residual sugar contents of sweet wines are governed by national rules.

Free SO2 content (mg/l) is measured when the wine is ready for sale.

SO2			
Max. values for free SO2 in white wine (wine for sale)	30	25	25
Max. values for total SO2 in white wine	100	80	80
Max. values for free SO2 in rosé wine (wine for sale)	30	25	25
Max. values for total SO2 in rosé wine	100	80	80
Max. values for free SO2 in half-dry wines with 5 to 40 g/l of residual sugar (wine for sale)	40	35	35
Max. values for total SO2 in half-dry wines with 5 to 40 g/l of residual sugar	125	105	105
Max. values for free SO2 in red wine (wine for sale)	30	20	20
Max. values for total SO2 in red wine	80	60	60
Max. values for free SO2 in sparkling wine (wine for sale)	30	20	20
Max. values for total SO2 in sparkling wine	80	60	60
Max. values for free SO2 in sweet wine with more than 40 g/l of residual sugar (wine for sale)	45	40	40
Max. values for total SO2 in sweet wine with more than 40 g/l of residual sugar	180	160	160
Maximum increase in total SO2 when barrel-ageing for more than 18 months	15	15	15

AUXILIARIES			
Not permitted: vegetable gelatine			●
Not permitted: silicon dioxide/silicic gel			●
Not permitted: gum arabic			●
Not permitted: carbonic acid			●
Not permitted: Organic yeast nutrients based on inactivated yeast cells			●
Permitted: bentonite	●	●	●
Permitted: tannin	●	●	●
Permitted: Egg white	●	●	●
Permitted: milk products	●	●	●
Permitted: Storage under inert gas N2, CO2, Ar	●	●	●
Permitted: Fining wines using lees from your own cellar or from other organic producers	●	●	●
Not allowed: any other auxiliary substances or aromatic additives not listed here	●	●	●

FILTRATION			
Not permitted: Ultrafiltration (<0,1 micrometre)	●	●	●
Permitted: diatomite	●	●	●
Permitted: perlite	●	●	●
Permitted: cellulose	●	●	●

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.

ORIGIN OF THE GRAPES / BLENDING			
Not permitted: the use of contaminated grapes.	●	●	●
When blending different quality wines, the lowest quality in all criteria determines the wine's quality.	●	●	●

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. Generally speaking, preference should be given to the use of organic materials. To prevent the formation of mould, care should be taken to keep the humidity level in the cellar below 90% at all times.

STORAGE, CLEANING			
Cleaning agents containing industrially produced chemical pesticides are forbidden.	●	●	●
Cleaning agents containing chlorine or eau de Javel are forbidden.			●

5.5. Bottle sealing

Objective

To use natural cork when corking bottles

Background

Cork comes from renewable sources, is gas-permeable to a determinable extent, is very flexible due to its cell structure and can be completely recycled for other purposes. Storage and aging of wines are absolutely no problem with natural cork, as long as the cork quality rules out all TCA contamination and has been cleaned using the hypercritical CO2 process or any other non-chemical method. The use of natural cork provides promising perspectives with regard to the TCA issue.

Corks made of agglomerated cork and twintop corks contain a lot more pores, thereby promoting the development of TCA and other elements contaminating the wine. Furthermore, the glue used

in their production is not organically-based, leading to environmental problems.

Plastic corks cause wines to age prematurely and oxidise. Their use is therefore forbidden for Delinat wines.

Screw-tops constitute a possible alternative, both with regard to the storage and aging of the wine and to their environmental impact. Nevertheless, Delinat prefers natural materials to be used, if not only because customers prefer natural corks best of all.

BOTTLE SEALING			
Not permitted: the sterilisation of corks using radiation, the use of corks washed with chlorine, coloured corks, colmatated corks, plastic corks.	●	●	●
Agglomerated and twintop corks are forbidden excepted for sparkling wines.			●

SOCIAL POLICY

6. SOCIAL STANDARDS AND RIGHTS

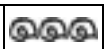
6.1. Social standards

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.

SOCIAL STANDARDS			
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 to be prevented.	●	●	●
Child labour is forbidden.	●	●	●
All forms of discrimination are forbidden.	●	●	●
Wages below the statutory national minimum wage and wage cuts as a disciplinary measure are forbidden.	●	●	●
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.	●	●	●
Overtime must be reimbursed by compensatory payments.	●	●	●

6.2. Employment contracts, safety at work, 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.

EMPLOYMENT CONTRACTS, SAFETY AT WORK, RIGHTS			
The employment of staff without contracts is forbidden when no valid cause is evident.	●	●	●
Employees are to be instructed about all potential health and accident risks.	●	●	●
All employees must be provided with sufficient and adequate protective clothing.	●	●	●
All employees must have access to decent accommodation and hygienic facilities.	●	●	●
All employees must have access to healthcare.	●	●	●
All employees are to be given an unlimited right of assembly.	●	●	●
Any discrimination of employees due to trade union membership or activities is forbidden.	●	●	●

ADDENDUM

7. BUSINESS JOURNAL AND PARCEL PLANS

Objective

To keep a careful journal of company activities.

Background

Even if causing an increase in the winegrower's administrative burden, it is essential that a journal be kept, recording all decisive activities and flows of materials. A carefully kept journal is he only way of ensuring transparency vis-à-vis the customer and allowing the Delinat Institute to effectively provide advice. The following work processes are to be documented in the journal:

BUSINESS JOURNAL AND PARCEL PLANS			
Obligatory entry in company journal: when and how much seed used	●	●	●
Obligatory entry in company journal: when and how much fertiliser applied	●	●	●
Obligatory entry in company journal: when and how the soil is worked	●	●	●
Obligatory entry in company journal: when, how and how much watering is done and source of the water	●	●	●
Obligatory entry in company journal: when, how and how many plant protection measures are applied	●	●	●
Obligatory entry in company journal: plans of parcels (overview), ecological compensation areas and conventionally farmed neighbouring land.	●	●	●

8. GENERAL CONDITIONS

GENERAL CONDITIONS			
The whole company, including all commercial production units belonging to it, is operated in an organic manner and is subject to monitoring and certification.	●	●	●
The inspection body may not be changed without prior disclosure of the reasons and a written communication to Delinat Institute.	●	●	●
The use of GMO products or products produced using GMO is forbidden.	●	●	●
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).	●	●	●
The use of ionising radiation and ionised products is forbidden.	●	●	●

8.1. The Delinat quality grades

The present guidelines based on an annually adapted system of grading, taking into account the latest research results of the Delinat Institute. The Charter for Biodiversity (see appendix) represents the ultimate target and winegrowers get closer and closer to it through the development of their winegrowing and winemaking techniques. The current status of the progress made by individual winegrowers is available on Internet.
The clearly-defined target specifies that by 2015 at the latest, one half of vineyards supplying Delinat shall completely fulfil the Charter for Biodiversity, while at the same time operating without any negative effects on the climate. In 2015, grade (the highest grade or seal of quality) will correspond to this target, with Delinat itself wanting to be measured against the attainment level of this target.

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 whole company or business. In winemaking, they apply to the individual products.

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 5 years.

The grades are annually adjusted to the latest research results. To gain recognition in one of the three Delinat grades, the following requirements must be met:

1. Compliance with the EU Organic Farming Regulation (annual inspection and certification by a EU monitoring body).
2. The existence of a fully completed 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 from 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.
   In addition, there are strict selection criteria for any wine to be accepted. These relate to two levels:
   1) sensory evaluation and 2) analysis.

8.2. Inspection and Certification

EU monitoring certifies compliance with the EU 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 EN 45011 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.

APPENDIX

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.

Biochar

Biochar is gained by pyrolysis turning organic material (green cuttings, marc, organic waste, etc.) into char. Biochar is used as a soil conditioner in agriculture and arboriculture. As biochar remains stable in the soil for thousands of years, thereby constituting a stable carbon sink, it is gaining increasing attention as a potential instrument for protecting the climate – alongside it`s properties as a valuable soil conditioner .

Carbon sink (carbon capture)

Introduction and storage of carbon in the ground as a contribution of agriculture to climate protection.

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 the Delinat Institute for an exemption. When accepted, an exemption is always provided in written form. The document must be available for presentation on any inspection.

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 grades (or seals of quality) , or

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 Delinat snail serves as the basis and starting point for further development towards grades und .

Delinat Institute

The Delinat Institute, located in Arbaz (Wallis, CH), develops and verifies in its own vineyards the biodiversity and sustainable vineyard management principles upon which these guidelines are based. Together with Delinat partner winegrowers in other climate zones, these principles are adjusted to the conditions existing there and further developed. The offer of consultation and cooperation is open to all Delinat winegrowers.

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 EN45011 certification.

Natural products

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

Nanotechnology

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

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.

Charter for vineyards with high biodiversity

The principal idea of the new methods for a quality orientated wine growing is aimed at a precise encouragement of biodiversity. Nevertheless, the idea only arises indirectly from that esthetical image of a vineyard where one can perceive the smell of flowers and where the grasshoppers are jumping around; it is rather based on the concept of understanding the vineyard as an ecosystem, whose flexible balance is formed by means of a complex network of a high biological diversity.
The promotion of biodiversity is not the goal itself, but the path for the establishment of the vineyard as a stable ecosystem. The main objective for the encouragement of biodiversity is to convert the vineyards into stable ecological systems and to increase the quality of the Terroir by means of a sustainable use of the natural forces.

Biodiversity of the soil and the soil-cover

1. The encouragement of biodiversity in the vineyard starts from the **reactivation of the soils**. For this purpose only bioactive manure is applied: compost, compost extracts, herb extracts, green fertilizer, red leaves capet, MRF. The uses of artificial manure, concentrated fertilizer, herbicides or liquid fertilizer are not allowed. An application of non-composted animal manure must equally be avoided.

2. Installation of a **constant green manure through leguminous plants** between the stocks. Recreation of a closed material flow and guaranteeing a nutritive supply of the stocks without the need of an additional artificial manure. The sowing of grand variety of leguminous plants provides a very high biological activity of the soil and improves the storage of water and nutrients as well as controlling the erosion.

3. Green soil cover all year round. The goal is to achieve a **plantation rich in species** with autochthonous flowers. At least 20% of the seeds mixture for the green manure must be composed of plants with flowers that attract insects. In total one must be able to find at least 50 types of wild plants on the vineyard.

Vertical Biodiversity

4. Plantation of **bushes** at the end of the respective rows where they do not interfere with the work cycles. The criteria for choosing the bushes is based on the potential attractiveness to butterflies and other insects, the nesting possibilities, the symbiosis of the roots and the use of their fruits. Autochthonous species will be planted.

5. Plantation of **hedges** as an intermediate line between the stocks. Depending on the local conditions, at least 2 x 20m of closed hedges per hectare. The hedges are potent biodiversity hotspots and as aisles, ideal for a network connection of ecological areas. As natural barriers between the rows they hold back the epidemic spreading of harmful fungus.

6. Plantation **of fruit trees** for the improvement of the vertical diversity. Trees among plants of little height and in badly structured cultivation areas represent an enormous attraction for birds, insects and other groups of animals and encourage a repopulation of the ecological habitat. The trees that are outstanding in an aerial plankton also act as collectors of spores; an area from where the yeasts and other fungus can expand in the vineyard (diversity of natural yeasts for the wine making and as a competition for harmful fungus).

At least one tree should be planted between the stocks for each hectare of ground as well as several small trees on the appropriate boundaries with orientation NE-NW. The distance to the nearest tree should not be more than 50m from any point of the vineyard. Possible losses in the Harvest may be compensated by the harvest of fruits.

Structural Biodiversity

7. Ecological compensation areas rich in species of at least 2 x 20 m2 for every hectare should be created as **diversity hotspots** both in the centre of the boundaries of the plots with stocks, where aromatic herbs and wild flowers grow (ruderal vegetation and flora, megaforbics). The distance to the nearest hotspot should not be more than 50m from any point of the vineyard.

8. Creation of structural elements such as **stones and piles of woods** for reptiles and insects. Installation of artificial nests for wild bees, insects and birds. The artificial nests may be integrated on the staking posts. Perches for birds of pray for a reduction of rodents. The pesticides used in the spraying must, therefore, be composed by harmless substances for bees and insects (renounce to chemical pesticides and sulphur)

Crop biodiversity

9. Cultivation of at least one **secondary crop** in the interstices of the main crop. This can be a vegetable such as tomatoes or pumpkins, a fruit such as raspberries or strawberries, a winter cereal such as rye and barley or aromatic herbs, planted or sown between the rows of vines. Also suitable are fruit bushes like chokeberry, sea buckthorn or sloe planted in lines between the vines, as are rows of fruit trees (vineyard peach, plum, almond, quince, etc.). Secondary crops also include bees, sheep, chickens, fish and other small farm animals. The areas earmarked for secondary crops must be large enough to ensure a proper economic return.

Genetic Diversity

10. Instead of grubbing the old vineyards and planting the surface again from scratch, the old stocks are replaced one for the other, choosing the plants by means of **massale selection** in the same vineyard and planting them as graft in the corresponding nurseries, therefore achieving a selection of varieties of multiple generations which adapts perfectly to the Terroir. The genetic diversity obtained, reduces the pressure of infection due to plagues, increases the hardiness before the dominant environmental conditions and improves the quality of the wine.