

ORGANIC DAIRY PRODUCTION- SHARING THE DUTCH EXPERIENCE

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Introduction

Organic farming is something that is often misinterpreted by the scientific community and leads to confusions as to what is purely organic. Situations, which are semi organic or pseudo organic in nature, are commonly claimed as true organic in our situations. This paper summarizes the production regulations for organic dairy production that exist in the Netherlands, a country which has advanced so much and holds a respectful position in the world dairy map.

1. THE TRANSITION OF LAND, ANIMALS AND FARM

Before products can be traded as organic products, both land and animals must pass a transitional phase from "common" farming to "organic" farming. For this phase, a minimum period must have been maintained in which, all of the organic farming rules have to be observed. However, products cannot be sold as "Organic". This period is called the "transitional phase".

The transitional phase starts on the date set by an official **Skal** (the company in Netherlands, which has the official responsibility to control farmers on whether they observe the "organic production rules and legislation") inspector after the last spraying / spreading of manure has been completed or when the animals were treated for the last time with a not permitted product according to the rules for organic production. This is the starting date.

LAND

The transition of grassland or land where fodder crops are grown takes 24 months. Grass harvested 24 months after the starting date can be sold or used as "organic" roughage. Fodder crops other than grass sowed / planted 24 months after the starting date

can be sold / used as organic roughage. Grass and other fodder crops, harvested between 12 and 24 months after the starting date, can be sold or used as "roughage produced during the transitional period for organic production."

ANIMALS

The transition period of animals takes 3 months for dairy cattle kept for milk production. The transition period for cattle for meat production takes 12 months. If the period that cattle has been on the farm is shorter than 12 months than they should have been kept under organic production circumstances for at least 75% of their life before they can be sold as "organic cattle". These time periods are valid for cattle that are there on the starting date of the transitional period as well as for cattle that are purchased from outside the farm.

During the transition of a dairy farm, it is not always necessary to wait 24 months before the farmer can start with delivery of organic milk. Twelve months after the starting date the farmer has "transitional grass / fodder" produced on his / her own farm. This transitional fodder may be used, to a certain extent, as "organic" fodder. When the farmer purchases organic feed and fodder he / she can start with the transition period of the dairy cows. The fodder supplies (hay, silage) produced before the start of the transitional period should have been finished. After the dairy cows have been kept according to the rules for organic production the farmer can sell the milk as "organic milk". Delivery of organic milk will then take 15 months. The farmer has to continue buying organic feed and fodder until he / she can start feeding biological / organic products from his / her own land.

SEPARATION BETWEEN ORGANIC AND NORMAL PRODUCTS AND BETWEEN ORGANIC AND NORMAL KEPT ANIMALS

It is not permitted to keep organic and common animals of the same kind on the same farm. All cattle on the farm must be managed organic. Besides organic cattle, other kinds of animals may be present on the farm. However they should be kept in separate sheds. Feedstuffs and fodder have to be stored in such a way that mixing of common, transitional and organic feedstuffs / fodders is prevented. In the storage it must be clearly visible what kind of feedstuff it is. It is during the transitional period, during which cattle still receive common feed and fodders.

Use of manure

An organic farmer is allowed to keep per hectare (ha.) a certain maximum level of cattle. The permitted maximum number coincides with a manure production of 170 kg N (nitrogen) per ha. per year. Other categories of animals, if present, should also be included in the "N" calculation.

TABLE 1: PRODUCTION LEVELS OF N PER CATTLE CATEGORY AND MAXIMUM NUMBER OF ANIMALS, WHICH CAN BE KEPT ON 1 HA.		
Cattle category	N production standard per year	Maximum number of animals per ha
Dairy cows	94.3	1.80
Dairy cows in tying down shed with "firm manure"	86.8	1.96
Dairy cows in "deep litter shed" with "firm manure"	74.7	2.28
Young stock > 1 year	63.2	2.69
Young stock < 1 year	30.9	5.50
Breeding bulls > 1 year	51.0	3.34
Breeding bulls < 1 year	28.1	6.05

A higher number of cattle are only allowed if the manure produced in excess of 170 kg N/ha is sold / moved out of the farm. This is possible for example by making an agreement with an organic arable crop farmer.

If a farmer is keeping a lower number of animals than what is permitted, it is allowed to use manure from outside the farm until the maximum level of 170 kg N/ha is reached. If, through laboratory testing, the farmer can prove that his N production on the farm is lower than calculated according his / her number of animals, it is also allowed to use

2. Grass and fodder crop production

All material used in grass and fodder production (seed and seedlings) must have organic origin and may not be disinfected. The use of genetically modified varieties is not allowed. Only the use of fertilizers and other products to improve soil fertility (mentioned in Annexure IIA) and the crop protection means (mentioned in Annexure IIB) may be used. When no organic seed is available it is allowed, after first obtaining permission from Skal, to use not disinfected common seed. It has to be checked and ensured that the seed label indicates that the seed is "free of genetic modification"

manure from outside the farm until the maximum level of 170 kg N / ha (or keep more cattle). The manure from outside the farm must be biological manure. For proper utilization of manure in the growing season, proper storage facilities must be available on the farm.

1. Use of other fertilizers and materials which can improve soil fertility

Except for manure, only a limited number of fertilizers and materials, which can improve soil fertility, are allowed.

(See Annexure IIA).

2. Origin of animals for biological dairy production

Cattle purchased for a biological dairy farm must have a biological origin. Cattle that were present during the starting date of the transition period can, after obtaining approval from Skal, become biological animals. Only in a limited number of cases dispensations is given for allowing biological farmers to purchase common cattle. After common cattle have arrived on the biological farm, the same transition period is valid as mentioned earlier, before dairy and other products can be sold as biological. Breeding bulls may enter the farm, if they are kept fully biological after arrival.

3. Grazing and housing of biological cattle.

GRAZING

All cattle must have, when weather – soil and health conditions permit, free access to grazing land. Grazing must be registered. The number of animals per ha in the pasture must be low enough to prevent overgrazing or trampling of wetland.

Housing

In the sheds for housing of biological cattle, there must be enough daylight and natural ventilation capacity. Each animal must have enough surface area inside the shed. With this inside surface area, the net surface area is meant which the animal has to walk, to lie down, to turn and to take care of her. For existing sheds that cannot meet the prescribed surface area, there is the possibility of a transitional phase.

The prescribed minimum inside surface area is as follows:

- 6 m² per dairy cow
- 10 m² per breeding bull
- 1.5 m² per young stock up to 100 kg
- 2.5 m² per young stock up to 200 kg
- 4 m² per young stock up to 350 kg
- 5 m² per young stock > 350 kg

Maximally half of the floor surface of the inside space of the shed may comprise of slatted floor constructions. The rest of the surface area must be closed and has to be level. The floor should not be slippery. Each animal must have a clean and dry lying down place with enough and dry litter of natural material (like straw). Normal straw may be used as

litter (not as a feedstuff). It is not allowed to use normal straw and biological straw at the same time, not even when the biological straw is used as fodder and the normal straw as litter. Calves should be kept in groups. It is however allowed to house calves in so called "iglo's". Cattle may not be tied down. Only in connection with the well-being and safety of the animals, if it is necessary this is allowed. For cleaning and disinfection of sheds and installations only products may be used which are mentioned in Annexure IIE. Further more, rodenticides (products to combat mice and rats) may be used.

WALKING SPACE OUTSIDE THE SHED

For breeding bulls older than 1 year, which do not have access to grazing land during the grazing season, enough walking space in the open air must be available. This walking area may for 75% have some sort of roof.

The prescribed minimum surface areas outside the shed of animals which do not have access to grazing land is as follows:

Breeding bull	30 m ²
Young stock < 100 kg	1.1 m ²
Young stock < 200 kg	1.9 m ²
Young stock < 350 kg	3 m ²
Young stock > 350 kg	3.7 m ² + 0.75 m ² / 100 kg heavier than 350 kg

4. Dairy cattle feeding

Cattle must be fed with biological feed and fodder, preferably originating from one's own farm. Besides biological feedstuffs only feedstuffs, additives and other products may be used which are mentioned in Annexure IIC and D. Animal feedstuffs may not be produced using genetically modified organisms or related products. Antibiotics, medicinal products or products which will increase growth or milk production may not be used in feeding livestock

RATIONS

For the composition of rations the following guidelines must be observed:

-All ration calculations should be based on dry matter percentages. The calculation involves a one year period, unless mentioned otherwise

-Maximum 30% of the ration may comprise of "transition feed and fodders". If the transition feed

originates of one's own farm, this percentage may be increased up to 60%.

-Minimum of 60% of the ration should comprise of roughages. It is not allowed to feed "common" roughage.

Calves should be fed for a minimum period of 3 months after birth natural milk, preferably cow milk. It is allowed to use milk, which has been prepared of biological milk powder. The milk should, in this case, not contain antibiotics or medicines.

5. HEALTHCARE

Disease prevention under biological circumstances is based on optimizing feeding, caring and living circumstances of the livestock. This will result in optimum natural resistance of the animals against diseases.

Treatment of diseases should preferably be done using homeopathic means. If these means are not effective and a treatment is necessary to prevent pain and suffering of the animal, common medicines may be used after a qualified veterinarian has made an attest. Standard **preventive** use of chemically synthesized allopathic medicines and antibiotics is not allowed. Use of hormones or growth – or production increasing substances is not allowed. Use of hormones for treatment of infertility is allowed if it only involved a limited number of animals and administered by a veterinarian. In case allopathic medicines have to be used the "legal waiting period" which have to be observed should be **doubled**. In case no legal waiting period is determined a waiting period of minimum 48 hours has to be observed. All used medicines have to be recorded

NUMBER OF TREATMENTS

Only a limited number of treatments are allowed with chemically synthesized allopathic medicines and antibiotics. These medicines may only be used for curative treatment and a veterinarian should have attested the necessary use. The maximum number of allowed treatments is two within one year. The number of treatments is counted per animal individually. A series of treatments is counted as one treatment. When an animal is treated for different, but inter connected disease patterns, this is being counted

as one treatment.

Exempted from the above regulation are the following treatments:

- *Treatments, which have to be done according to national law*
- *Vaccinations*
- *Treatments against parasites*

If the number of allowed treatments is exceeded, this has to be reported to Skal. Such animals should be clearly "marked" and they may not be sold as organic animals. The milk of such animals should be separated and not sold as organically produced milk. After obtaining permission from Skal, such animals, after a new transitional period, may be used again for organic production.

6. ADDITIONAL DEMANDS IN RELATION TO DAIRY PRODUCTION

All treatments of the animals, like transportation of animals, have to be carried out observing utmost care for the well being of the livestock.

Only the following "operations" are allowed:

- Reproduction of biological animals must be based on natural methods. Artificial insemination is however allowed.
- Castration of bulls is allowed if a veterinarian carries it out, at the right age and under sedation.
- For dehorning of cows a general exemption is valid. During dehorning, suffering of the animals should be minimized. Dehorning is allowed when a veterinarian executes it, at during transport.
- during transport of cattle no "common" allopathic sedation means may be used. The use of electronic tools to force animals is not allowed.

7. ADMINISTRATION

Organic farmers have the obligation to maintain a good administration of the entire farm management. The administration should include the maintaining of the following data (information on these data should be available during visits of the Skal inspector).

Grass and fodder production:

- The grass and fodder production plan
- Origin (biological, transitional or normal) and

quantity of used seed and planting material.

- The time and the used method, for crop protection, including, used quantity of pesticides.
- Used methods of fertilizing the land:
- Number of cattle per ha
- Quantities and kinds of fertilizers and manure, which originate from outside the farm and which are used on the different parcels of land.
- System of green manuring.

Animals:

- Number of animals per shed
- Arrival date, origin, identification number and veterinarian file of animals which are brought in from outside the farm and their status (common, transitional or biological)
- Departure date, age, weight in case of slaughter, identification marker and destination of the animals which leave the farm
- Animal losses and their causes
- The periods that the animals have access to grazing grounds or walk freely outside the shed in the open air
- Disease prevention, treatments and veterinary care (date of treatments, diagnosis, and way of treatment, name of the medicine, dosage, active substance of the medicine, the legal waiting period, the prescription of the veterinarian with motivation).

Feeding:

- Used feedstuffs, the kind of feedstuff (concentrates, by products, roughages) and their origin (biological, transitional, from one's own farm or from outside), including the used supplements.
- The quantities of the various feedstuffs in the rations
- The produced quantities of roughages on the farm, the starting supplies, the purchases and sales and end supplies (31st December of each year) of concentrates and roughages.
- The complaints of the companies, which buy the farm products and the measures taken to resolve the complaints.
- Genetic modification free declarations for purchased "normal" feeds and fodders, seed and plant material, organic manure and crop protection

means.

Produced products:

- Produced quantities and their destination.

8. Dispensation possibilities.

- In some situations dispensation is possible. The Skal Inspector can grant a few dispensations during an inspection. Other dispensations have to be requested for in writing the forms for which can be obtained from Skal. Skal must grant a dispensation before the activity, for which dispensation is requested for is implemented or before the date the farmer has to fulfill a certain obligation. Skal will judge whether the required conditions are met. After approval, the farmer will receive written permission.

9. Certification and control of biological production.

For biological production in the member states of the European Union, including The Netherlands, official European legislation is present since 1991. Each member state decides individually which organization receives the (public) responsibility for certification and control over biological production. In the Netherlands the "Skal Foundation" has been assigned this "public duty" by the Netherlands Ministry for Agriculture. The control/inspection comprises farm/company visits, taking of samples and administrative controls. The certification of farms/companies involves the decision whether a farm/company is allowed to produce/sell products as "biological products". When a farm/company meets all the demands the farm/company receives a certificate. Skal controls/inspects the production process and not the individual products as such. Based on a certified production process the products may carry the indication "biological". Skal is also the legal holder of the **EKO** – hallmark. This hallmark is protected in a large number of countries. The use of the EKO hallmark requires official permission from Skal. This hallmark is well known by the consumers in The Netherlands. Producers, which are allowed to use this hallmark usually, receive higher prices for their products. If a product is approved in one EU member state, then the product may be sold throughout the entire EU as "biological". Skal does not receive subsidy and is self supporting. Farms/ companies, which fall under the control/ inspection and are certified

by Skal have to pay a fee.

Annexure IIA: FERTILIZERS AND SOIL IMPROVEMENT SUBSTANCES, WHICH ARE ALLOWED IN ORGANIC CULTIVATION

Except for animal manure and composted animal manure, only a limited number of fertilizers and soil improvement substances are allowed for use in biological agriculture. The ones mostly used are mentioned in the list below.

- Mushroom compost
- Clay (perlite, vermiculite, etc.)
- Worm compost and insect manure
- Composted plant material*
- Blood meal, hoof meal, horn meal, bone meal, fish meal, feather meal, wool refuse, by product from skin processing, hair
- Saw dust, composted bark and ashes from non chemically treated wood
- Soft phosphate (maximum Cadmium content of 90 mg/kg P205)
- Aluminium calcium phosphate (maximum cadmium content 90 mg/kg p205, only on soils with pH > 7,5)
- Basic slag*
- Crude potash salt and magnesium salt containing potash sulphate*
- Natural calcium-and magnesium carbonate
- Natural calcium carbonate (chalk, etc.)
- Magnesium sulphate of natural origin*
- Calcium sulphate of natural origin*
- Elementary sulphur
- Micro elements mentioned in the EU directive 89/530/EU
- Stone salt (sodium chloride)*
- Stone meal

* These fertilizers may only be used when the need is demonstrated through soil analysis reports

Annexure IIB: Crop protection means allowed in organic production.

Materials with animal or plant origin:

- Gel insecticide
- Hydrolyzed protein bait, only in combination with other products mentioned in Annexure IIB
- Oils from plant origin
- Pyrethrine, extracted from *Chrysanthemum cinerariaefolium*
- Quassia, extracted from *Quassia amara*
- Rotenon, extracted from *Derris* spp., *Lonchocarpus* spp. and *Tephrosia* spp.

Micro organisms for biological disease treatment:

- Micro – organisms (bacteria, viruses and fungi)

Materials which may only be used in traps and sprayers :

The traps and / or sprayers are designed in such a way that the used active substances cannot enter the environment and will come in touch with crops. The traps have to be collected after use and should be safely destroyed.

- Di ammonium phosphate bait for traps
- Pheromone insecticide for traps

Other substances, which have been used traditionally in organic production:

- Potassium salt from fatty acid (soft soap), insecticide
- Paraffin oil insecticide, acaricide
- Quartz sand, repellent
- Sulphur fungicide, acaricide

Annexure IIC: Feedstuffs, which are allowed in organic animal husbandry.

1. FEEDSTUFFS FROM PLANT ORIGIN:

A number of "common" feedstuffs of agricultural origin may be used in organic production if the biological "version" is not available. The mentioned feedstuffs are allowed if they have been produced without the use of chemical solvents. The quantity of "common" feedstuffs, which may be used, is limited.

- Grains and their by products
- Oil seeds, oil containing fruits and by products
- Seeds from leguminous crops and their by products
- Roots and their by products
- Other seeds and fruits and their by products
- Fodder crops and roughage crops
- Other plants and their by products

2. FEEDSTUFFS FROM ANIMAL ORIGIN:

The following feedstuffs from animal origin may be used, irrespective of whether they originate from biological, transitional or "normal" sources.

- Milk and milk products
- Fish, other sea animals and by products

3. FEEDSTUFFS FROM MINERAL ORIGIN:

These feedstuffs from mineral origin may be used

to meet the nutrient requirements of animals.

- Sodium, calcium, phosphor, magnesium and sulphur

Annexure IID: Additives and technical substances which are allowed in the preparation of animal feedstuffs for organic animal husbandry.

1. Additives.

- Micro elements: Fe, 1, Co, Mn, Zn, Mo, Se
- Vitamins, pro-vitamins and other substances which have a similar working
- Enzymes
- Micro organisms
- Preservation substances (organic acids for preparation of silage)
- Binding substances, diluting substances and coagulation substances

2. Technical materials for preparation of animal feedstuffs:

Substances, which can be used in preparing silage (sea salt, enzymes, sugar, beet pulp, organic acids)

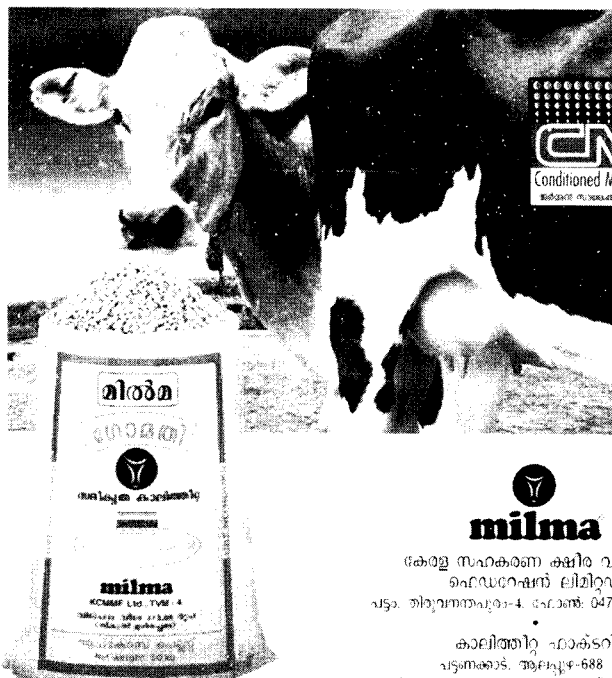
Annexure IIE: Products, which may be used for cleaning and disinfection of buildings and installations used on livestock farms.

- Potassium and sodium soap
- Water and steam
- Calcium milk
- Calcium
- Sodium hypochlorite (bleach water)
- Sodium hydroxide
- Potassium hydroxide
- Hydrogen peroxide
- Natural plant extracts
- Organic acids
- Alcohol
- Nitric acid
- Phosphoric acid
- Formaldehyde
- Cleaning and disinfection substances for teats and milking installations
- Sodium carbonate



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