Natural Dairy Cow Health

A guide to keeping your herd healthy with herbs and other natural products

bioKennis

Maria Groot, RIKILT
Gerdien Kleijer-Ligtenberg, IEZ
Tedje van Asseldonk, IEZ
Hanneke Hansma, KoeNatuurlijk

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RIKILT – Institute for FoodSafety
WageningenUniversity and Research Centre
PO Box 230, 6700 AE Wageningen
The Netherlands
Phone + 31 317 480 256
Fax + 31 317 417 717
Internet www.rikilt.wur.nl/NL/

Institute for Ethnobotany and Zoopharmacognosy (IEZ)
Rijksstraatweg 158,
6573 DG Beek-Ubbergen
The Netherlands
Phone + 31 24-6844301
Fax + 31 24-6843939
Internet: www.ethnobotany.nl

Natural Dairy Health

A guide to keeping your herd healthy with herbs and other natural products

Compiled
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Johanna Fink-Gremmels, FD-UU
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Mare Nynke Zijlstra, IEZ
Aleksandar Ristanovic
Biologica

Translation: Mirjam Hommes

DISCLAIMER

Great care has been taken in compiling this publication. However, the writers cannot be held liable for any damage caused by the use of products mentioned in this text. The information presented here is partly based on information provided by others. Unfortunately we do not have the time or financial means to check all information exhaustively.
It is recommended that professional pig farmers get their information on this subject from a variety of sources and discuss the use of natural products with a pig veterinarian. The order of the products in the tables does not imply a valuation of any kind. The lists of products are not exhaustive and complete. When only a few names of general products that contain the same active substances are given, no preference for these products is implied.
We expect all users of this booklet to apply the dosage and use recommended by the manufacturer. When in doubt about use, dosage or duration of a treatment, you can contact the manufacturer of the product.

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1 Working with natural products

This booklet is intended to guide dairy farmers through the ever increasing supply of herbs and other natural products on offer. Herbs and other natural products can support healthy animals in stressful situations or enhance treatment with conventional medication. The greatest added value of the use of natural products is disease and problem prevention.

Which natural products have proven to be effective and which products might be effective, based on the currently available knowledge? This guide aims to answer these questions. Because this type of knowledge is developing quickly, updates will be necessary from time to time.

Besides general information on the use of natural products (in this chapter and in Annex 1), this guide will also provide information on suitable management measures for a number of health issues. The role of natural products in the application of these management measures will also be dealt with. At this time (June 2011), this guide is incomplete. When possible, it will be added to in years to come.

1.1 Preventive use

Preventing diseases is overall a much better option than combating them. Prevention of animal diseases is therefore a focal point on many farms. Prevention comprises not only of preventing an infection from entering the farm and spreading, but includes good nutrition, suitable housing, good management, a sensible breeding programme and appropriate rearing. This way, the general resistance to diseases of the animals is improved.

Primary prevention means: by improving the general disease resistance, less animals will get ill, or the illness will be less severe in case of infections. Also, animals will recover more quickly when they have better resistance. It is therefore always a good idea to work on the general disease resistance of animals, even if no disease has (yet) been identified. Primary preventive measures are generally taken at farm or cow house level.

Secondary prevention means: when animals do get sick, they will heal quicker because their general fitness is better. Animals will heal under their own steam, as much as possible, using for instance certain herbs than can temporarily be added to the feed. These types of measures are generally taken for individual animals or groups.

Such an approach requires early identification of problems in animals. Timely correction of small problems can prevent heavier medication from being necessary down the line.

Vaccination is a well-known preventive measure. Blood can be examined for antibodies to check whether the vaccination has worked. The effectiveness of other preventive management measures is often harder to prove than the effectiveness of curative (healing) products. It is for example hard to prove that an animal does not become ill – or gets better quicker – by using certain feed additives.

1.2 Managing animal health

The basis for sustainable animal husbandry lies with a goal-oriented and responsible breeding policy, appropriate nutrition and housing, professional care with an eye for the individual animal and a good milking technique (in case of dairy cows).

Health and wellbeing are intrinsically connected, also in dairy cattle. Measures that improve animal welfare will also have a positive influence on health and productivity.

In a farm animal's life cycle certain periods or moments are naturally stressful. Examples are: birth, adaptation of new-borne animals to their surroundings, and changes in feed. In ruminants the development of the rumen is an additional stress factor. Health cannot always be taken for granted. Insight in these stressful events is essential to predict them and to take appropriate measures to help the animal through these 'hard times'.
Apart from these 'natural' stress moments external factors can contribute to stress in the animals. Examples are weather changes, seasonal feed changes, infections (viral, bacterial or parasitic) and the risk of wounds and injuries. To curb the influence these external factors have on the animals, preventive measures can be taken. A proper vaccination policy, hygiene barriers and optimal disease resistance of the animals are all important.
Natural feed components and herbs can help sustain animal health. Using these products can diminish the number of disease outbreaks on a farm and can help to restrict the use of modern medication (like antibiotics) to a limited number of severely diseased animals. Prevention is always preferable to treatment!

Health management on dairy farms requires a high level of professionalism. The overview of natural products presented in this guide is meant to contribute to sustainable health management.

1.2 Tradition and learning by doing

Herbs and micro organisms traditionally play an important role in managing animal and human health. They were used on perishable foodstuffs (garlic and oregano on meat products and lactobacillus in dairy products or sauerkraut for instance). Herbs have traditionally been used in medicine and have been the basis of modern medications (once their active substances had been identified). Singular active components may have poisonous effects when used in large dosages. Foxglove is an example: it can treat heart disease but it can poison horses and have harmful side-effects.

The word 'herb' generally refers to plants that – when used in 'normal' dosages – have no harmful effects. These plants contain numerous active substances, that together have a positive influence on animal or human metabolic processes. Garlic, for example, has a mild antibiotic effect on harmful bacteria in the gut, but also acts as an antioxidant in the liver. Because volatile substances from garlic are excreted through the lungs (when breathing), it even has a mild disinfecting effect on the respiratory tract. Insight into these kinds of effects has recently caused a rediscovery of herbs and natural products in human health care and animal preventive medicine.

1.3 Role of natural products in management

We cannot expect miracles from natural products, but they can help in fine-tuning. Good management and good nutrition remain most important. To prevent diseases it is advisable to pay strong attention to management, nutrition and hygiene.

Keep good record of the products that you have used: what they were used for, in which dosages and what the results were. Do not use products of unknown composition and definitely not based on unpublished results. Some plants may be harmful! Ask your feed supplier which herbs or aromas are already in your feedstuffs and get help from vets or feed consultants with in-depth knowledge of these matters. Do not experiment with multiple products at the same time.

When using herbs, keep the typical (physiological) characteristics of the animal in mind. Ruminants depend on the healthy functioning of their digestive system. Compounds with a strong antibiotic effect, can damage the micro organisms in the rumen. At the same time, micro organisms in the rumen can inactivate both harmful and healthy compounds, which may diminish or halt the positive effect of a large number of products. Effectively managing these effects also requires professionalism.

In acute disease veterinary intervention and regular medication remain essential. These are the top of the pyramid (Figure 1); as a farmer you are responsible for a firm basis.

Disease prevention through the use of natural products is important for animal health. On the one hand to reach an optimal general condition of all animals. On the other hand for the extra care of certain groups of animals at times when they need additional support.

Rosehip

Figure 1. Managing animal health
(from FiBL, 2006, adapted)

From bottom to top:
1. Measures on the level of breeding and production chain work on the long term and are related to for instance the choice of races or animal types, freedom from certain diseases and vaccination policy.

2. Management at farm level creates optimal conditions in terms of nutrition, climate, housing, hygiene and prevention of disease (vaccinations).

3. Natural products can be used to improve digestion, general resistance and general health. This can prevent diseases or support recovery.

4. In acute cases of disease, medication will be used. If this is successful, the problem will be rapidly solved. Damage will, however, already be done due to diminished growth or production, a higher mortality and the cost of the medications. It is therefore important that the situation does not escalate to the point where only medication can help.

1.4 Which products are allowed?

Please refer to your national organic registration agency to find out which products are allowed in organic production. Non-organic herbs may not be allowed or only in lower quantities.

1.5 Additional information

More background information can be found in the Annexes of this guide.

1.6 Literature

Literature available in German and English:

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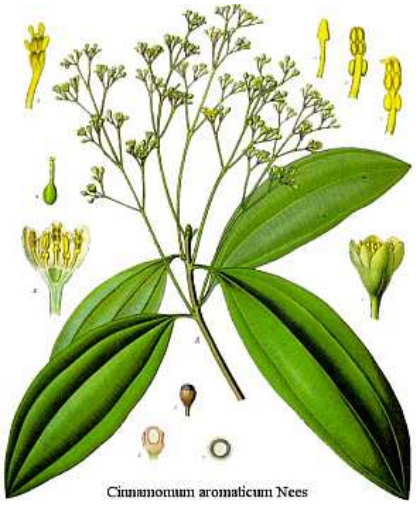

Cinnamon tree

2 Using natural products

2.1 Calving

Management and nutrition of dry cows is extremely important, because 80% of all health issues surrounding calving start during the dry period. Near the end of the dry period, the intake of dry matter by the cow can fall back from nearly 20 kg to 10 or 12 kg. This can cause a negative energy balance in cows, even before calving starts.

Cows suffering from hypogalactia have reduced levels of calcium in their blood. This is often caused by an overdose of cations (positively-charged ions) in their feed (especially sodium and potassium). Cows suffering from hypogalactia eat less and have weaker muscle contractions. This makes calving more strenuous and increases the risk of placental retention. The risk of stillbirth increases as the birth takes more time.

After calving it is important to give the cow glucogene energy to start lactation, prevent fatty liver syndrome and acetonaemia (ketosis). Fit cows stay healthier and more active after calving and get a better start. Sufficient exercise is important for a good uptake of feed.

Provide water and fresh roughage directly after calving (photo Hanneke Hansma)

A cow should drink at least a bucket of tepid water after calving. Some fructose could be dissolved in this water, to provide immediate energy. The cow also needs access to fresh roughage, to keep digestion going. Feeding concentrates for energy and failing to provide roughage can lead to acidification of the rumen. In case the cow does not want to eat and drink, it may be helpful to put a handful of salt into her mouth, to induce appetite and thirst.

<u>Management</u>

- Hygiene: Use a disinfecting lubricant en make sure your hands are clean when helping the cow and catching the calf.
- Provide a quiet environment, unrest and commotion will diminish the cow's natural production of oxytocines. This can diminish the contractions of the uterus and slow down the expulsion of the afterbirth.
- Prevent difficult labour and births by using appropriate bulls for younger cows.

Natural products

- Cafeine from coffee is a stimulant, it activates the cow and increases her appetite.
- Sabina stimulates uteral contractions and helps excretion of the placenta.

Product	Application	Composition	Use	Supplier
Coffea	Stimulates weaker cows and increases the metabolism	Caffeine, arabino-glycanes	Put in mouth	ECOstyle
Uterale	Induces contrac-tions of the uterus and expulsion of placenta	Juniperus sabina	Put in mouth	Virbac

Some homeopatic 'placenta-capsules' also contain *Calendula* and *Echinacea*. These two herbs have an anti-inflammatory and healing effect on skin and mucous membranes. Please note that here is some risk of bacteria entering the uterus when these capsules are inserted.

2.2 New-born calves

Management

- Colostrum: provide lots of it, quickly and often. Check whether calves that stay with the cow drink enough colostrum.
- Hygiene: Use a disinfecting lubricant en make sure your hands are clean when helping the cow and catching the calf
- Navel: bind if necessary and disinfect always.

Try to give the new-born calf at least 4 litres of colostrum during the first few hours after birth. It is important that the calf takes in about 5 to litres during the first 12 hours of its life. The antibodies that are absorbed during the first 16 hours, protect the calf against infections for the next three to four weeks. After that, the production of antibodies starts in the calf's body. The general resistance of its mother and the amount of colostrum the cow produces, are essential to colostrum quality.

Provide colostrum directly after birth (photo Hanneke Hansma)

Natural products

- Essential oils of lemon balm and cloves have an anti-inflammatory and cramp-reducing effect when used orally.
- Breathing in these oils, can induce sneezing and coughing up mucous.
- Herbs such as camomile, marigold and Peru balm have anti-inflammatory properties and improve wound healing.

Product	**Application**	**Composition**	**Use**	**Supplier**
Klausan	Disinfection of the navel	Camomile, marigold, oak bark, Peru balm and larch resin	Spray on navel	ECOstyle
Melissengeist Ademspray	Improves respiration and coughing up of mucous	Oil of lemon balm, lemon, nutmeg and cloves, a.o.	Spray in nose	ECOstyle

2.3 Feeding calves

Rumen development in calves

Knowledge of rumen development in calves helps to improve rearing. At birth only the calf's abomasum is fully developed, the rumen does not function yet. For this reason, calves are fully dependant on milk during the first weeks of their lives.

Pay attention to the following:

- Daily rations are supposed to be 5 to 6 litres a day (after an initial adjustment phase)
- Multiple smaller meals a day are advisable, especially at first, when the calf's abomasum has a volume of about 2 litres. Calves with a low birth-weight have smaller abomasums.
- Drinking temperature of the milk should be about 38-40 °C. Other temperatures often cause diarrhoea.
- When using artificial milk, please make sure concentrations are constant. See the instructions for use provided by your supplier. The milk needs to be lumb-free and e freshly made.
- Feeding with buckets can cause intestinal problems. If possible, feed the calf using a nipple bucket. This way, the milk is drunk more slowly and the calf produces more saliva. This increases the reflex of the esophageal groove, making sure the milk enters the abomasum and not the developing rumen. Enzymes in the saliva also play a role in digestion.
- Calves need to have clean water at their disposal at all times.
- Calves need to be fed solid feedstuffs – concentrates, hay - from the start.

Young calf (photo Hanneke Hansma)

2.4 Diarrhoea in calves

Non-infectious causes

- Feed and manner of feeding is the cause of many cases of diarrhoea in calves. Feeding milk with a bottle or bucket with nipple prevents many cases of feed diarrhoea!
- The esophageal groove prevents milk from flowing into the rumen, directing it to the abomasum. Insufficient reflexes of the esophageal groove is caused by: over-feeding, hasty drinking (hungry calves), wrong milk temperatures and soft nipples (need to be leathery). When milk enters the rumen combined with other feedstuffs such as concentrates, rotting can occur. This results in feed diarrhoea.
- Housing
- Hygiene
- Stress
- Colostrum distribution

The use of buckets with nipples prevents feed diarrhoea (photo Hanneke Hansma)

Infectious causes

Manure and blood tests can determine whether any of the following pathogens are present.

Calves< 1 month	Calves>1 month	Older animals *(as well)*
E. coli	Giardia	BVD virus
Rotavirus	Eimeria spp./ coccidiosis	Salmonella
Coronavirus		
Cryptosporides		

Management

- Colostrum: provide lots of it, quickly and often. Colostrum is important for the uptake of antibodies that can prevent diarrhoea (among other diseases).
- Hygiene: prevent diarrhoea by keeping birthing pens and calf pens clean to diminish number of pathogens present.
- Housing climate should be cool and dry.

- Hydration levels: as diarrhoea leads to significant losses of fluids and electrolytes, it is absolutely necessary to replenish these by giving an electrolyte solution.
- When a calf is very ill or cold, a 'bodywarmer' can help the calf to maintain its body temperature. This will reduce the amount of energy the calf needs to stay warm, making more energy available for growth and healing.

Note: notify your vet in cases of severe diarrhoea! Use the products below in mild cases or when diarrhoea is just starting to develop.

Natural products

- Natural products that contain tannins reduce diarrhoea. Examples are oak bark, common tormentil and tea.
- Herbs such as garlic and cinnamon help combat the causes of diarrhoea. Linseed and camomile can calm irritated mucous membranes.
- Pectins prevent (further) damage to the intestines, as they prevent bacteria from attaching themselves to intestinal cells.
- Charcoal binds surplus fluids and bacterial toxins. Use charcoal for limited periods only, as it also binds vitamins and nutrients, making them unavailable to the animal.

Product	**Application**	**Composition**	**Use**	**Supplier**
AA Stop powder	diarrhoea	Oak bark and calamus	Mix in milk	AAvet
Allicin/ DTS	diarrhoea	Garlic extract	Mix in drinking water	Cowhealth
Biopect	diarrhoea	Pectins and sugars	Mix in drinking water or milk	Macrovet, Agrivee
Boviferm plus	diarrhoea	Milk powder, Common tormentil, anise, camomile, fennel, banana flakes, and rice flour	Mix in milk	Veeservice IDAC Schippers
Carbovet-P	diarrhoea	Charcoal	Mix in milk	Schippers
Enterocin-C	diarrhoea	Garlic, cinnamon oil and fibres (fos)	Give in mouth with colostrum	Veeservice IDAC
Licodiar liquid	diarrhoea	Pectins, sugars and betaine	Mix in drinking water or milk	Farm store
Licopect and Holpect	diarrhoea	Pectins and sugars	Mix in drinking water or milk	Farm store

Breakfast tea (black tea or English tea) contains tannins. Make a dark tea and give when tepid, in cases of commencing diarrhoea. Adding salt to the tea can compensate for loss of electrolytes (sodium). Hay water is another product from popular medicine that can be used against diarrhoea.

Cachexy
Apart from these relatively well-known causes of diarrhoea a third cause of death is important: cachexy. Cachexy means 'emaciated' and means the calf dies of malnutrition.

Calf wearing a 'bodywarmer' (photo Hanneke Hansma)

2.5 Respiratory issues in unweaned calves

Lung problems in calves are usually caused by a mixed infection, involving the BRS-virus (Bovine Respiratoire Syncytial Virus)and a number of bacteria. Changing weather, high levels of humidity (>80%), large temperature differences between day and night and a poor housing climate increase chances of respiratory issues. Prevention mainly consists of keeping the calves dry: dry bedding, good ventilation (but no draught), no overpopulation of the cow house.
Young cattle that go to pasture can develop lung problems caused by lungworms (*Dictyocaulus viviparus*). Prolonged coughing is a typical symptom. A combined treatment results in the least amount of growth reduction. In this case the calf gets pain medication to keep it active and make sure it eats and drinks well. Additionally, an anti-inflammatory medication is given to counter damage caused by infections. These two treatments are combined with a product that de-activates the pathogens.

<u>Management</u>

- Colostrum: provide lots of it, quickly and often. Colostrum is important for the uptake of antibodies that can prevent diarrhoea (among other diseases).
- Hygiene: prevent diarrhoea by keeping birthing units and calf pens clean to diminish number of pathogens present.

- Housing climate should be cool and dry.
- Preventing a ‘cold drop’ is especially important for young cattle. Low lean-to’s offer warm shelters in barns with a high ceiling.

In large sheds lean-to’s can provide a warm and dry place for calves(photo Hanneke Hansma).

Natural products

- Essential oils of eucalypt, thyme and peppermint improve dissolution of mucous and have antibacterial properties.
- Garlic has antibacterial and antiviral properties and will enter the lungs in sufficient quantities when provided to suckling calves without functioning rumens (garlic in respiratory air).
- *Echinacea* and ginseng increase general immunity.

Product	**Application**	**Composition**	**Use**	**Supplier**
Aeroforte	Reduces mucous production	Peppermint, eucalypt and menthol	Mix in drinking water or spray	Kanters
Allicine / DTS	Antibacterial, antiviral	Garlic-extract	Mix in drinking water or put directly in mouth	Cowhealth
Immulon	Positive effect on immune system	*Echinacea*	Put in mouth	ECOstyle
Intra-aerosol	Reduces mucous production	Peppermint, eucalypt and menthol	Mix in drinking water	Intracare
Microbioticum	Antibacterial, antiviral, improves resistance	*Echinacea*, camomile, garlic and ginseng	Mix in drinking water or put directly in mouth	Ineko
MS Aeroplus Housing air	Mildy antibacterial, improves respiration	eucalypt, mint and anise	Sprayen in cow house	Schippers

2.6 Hypogalactia (milk fever)

During the last few weeks of gestation, the unborn calf extracts a lot of calcium (Ca^{++}) from the mother cow. When lactation starts a lot of calcium is secreted with the milk. Both these processes lead to calcium-shortages in the mother cow.

Management

- Feed management during the dry period and sufficient intake of calcium through feed around birthing are important;
- Cold ear tips are the first signs of hypogalactia.

If a cow is known to be sensitive to hypogalactia, problems can be (partly) prevented by giving the animal a vitamin D3 injection about 10 days prior to the birth of the calf. Vitamin D regulates calcium and phosphate levels in the blood, by stimulating the absorption of these compounds from feed in the intestines and re-absorption of the minerals in the kidneys. Vitamin D reduces the mobilisation of calcium from the bones.
The general resistance of the cow can improve when the right mix of minerals, vitamins and trace elements is provided. This will lead to a lower production of colostrum (5 to 8 litres during the first milking is the goal), but colostrum quality will improve: it will contain more antibodies and the right balance of fat and protein). Good quality colostrum will increase resistance and survival chances of the calf.

Natural products

- Provide a calcium and magnesium preparation, orally or parenterally. These preparations are available through your vet and a number of agricultural businesses.
- Give the animal herbs with bitter substances to increase its appetite.

2.7 Acetonaemia / ketosis: decreased liver function

The calf demands a lot of energy from the mother cow during the last few weeks before birth, as it grows quickly. Weight loss and the mobilisation of body fat create high demands on the liver of the cow. Supporting the liver function has a positive effect.
When a cow eats less and less before calving, the dry matter intake decreases and the cow relies more and more on breaking down her fat reserves for energy. When body fat is metabolised, free fatty acids end up in the bloodstream. A high fatty acid content in blood increases the risk of Fatty Liver Syndrome, difficult births, retention of the placenta, acetonaemia and hypogalactia, displaced abomasum and mastitis.

Management

- Feed: optimise nutrition during the dry period, birth and the first three months of lactation. Check energy content.

Natural products

- Milk thistle supports the liver function (detoxifies).
- Herbs containing bitter substances improve appetite and secretion of saliva (buffers rumen content).

Milk thistle

2.8 Stimulating the rumen

Management

- A healthy rumen function is directly connected to an appropriate feeding regime (including sufficient roughage and structure) and gradual feed changes. Measure the nutritional value of silages and feed regularly and add to it if necessary.

Natural products

- Herbs containing bitter substances, such as gentian, calamus and false helleborine stimulate the production of saliva. This ensures that the ruminal fluid is buffered optimally, which prevents ruminal acidosis. Do not harvest calamus and false helleborine yourself, as these plants need to be checked for dangerous substances.
- Yeasts (alive) or yeast cell walls stimulate the rumen flora, reduce methane production and can bind harmful substances (such as fungal toxins).

Product	**Application**	**Composition**	**Use**	**Supplier**
Bovi-C3	Stimulates rumen function	Gentian powder and silicic acid a.o.	Put in mouth	Veeservice IDAC
Bovin-stop	Prevents ruminal acidosis	Oak bark and calamus a.o.	Put in mouth	Veeservice IDAC
Colosan	Prevents and helps bloat (ruminal tympany)	Oil of linseed, cinnamon, caraway, fennel and anise, a.o.	Put in mouth	ECOstyle
Poeder nr 4	Stimulates rumen function	Calamus, gentian and minerals	Put in mouth	Virbac
Wesdigest	Stimulates rumen function and cud chewing	False helleborine and cobalt	Put in mouth	Virbac
Rumenate, Immunate and Mycosorb	Optimises rumen flora, prevents ruminal acidosis and is used against mycotoxins in feed	Yeasts (alive or yeast cell walls), sometimes combined with organic selenium	Sprinkle on feed	Alltech e.a..
Impact	Intestinal health, is used against mycotoxins in feed	Carbon, clay	Sprinkle on feed	J.Reinsma Beheer BV

Foeniculum vulgare Mill.

Fennel

2.9 Udder health

Management

- Milking technique: a properly functioning milk machine prevents damage to udders and nipples, which can become points of access for bacteria. Plan at least one 'wet' check-up a year.
- Hygiene: many cases of mastitis are caused by environmental bacteria. It is therefore important to pay attention to:
    - Dry and clean bedding
    - Clean milking area
    - Milking hygienically (udder rags!)
    - Dipping after milking (iodine or betadine dips)
    - Prevent the development of callus on nipples
    - Make sure the animal doesn't lie down immediately after milking, as the nipple closes slowly.
- In cases of acute (*E. coli*) mastitis (aberrant milk secretion): milk as often as possible to remove harmful bacteria and dead cells form the udder as quickly as possible.
- Make sure the cow drinks enough water (infuse water directly into the rumen if necessary).
- Keep the udder cool, using a hose and cold water.

Natural products

Internal use

1. In mouth
   Products that influence general resistance, can contribute to prevention and healing of mastitis.
2. In the udder
   Entering natural products into the udder is discouraged, as it is impossible to do this in a sterile manner. Bacteria entering the udder with the product can worsen the clinical or subclinical mastitis that is already present.

External use (on udders, nippels and surrounding skin)
Ointments and creams for external use improve circulation in the udder and can prevent the formation of callusses on the nipple tips (*Aloe vera* products are an example). When used in combination with regular milking out of the udder, these products can help remove bacteria and dead cells from the udder.
Mint, menthol and herbs such as camphor, laurel and arnica stimulate circulation of the udder. Note that the use of camphor involves the risk of taste deviations in the milk.

Product	Application	Composition	Use	Supplier
Allicine/ DTS	Improves resistance	Garlic extract	Mix in drinking water or put directly in mouth	Cowhealth
Aromabiotic Cattle	Reducing cell count	Medium-chain fatty acids	Mix in feed	Vitamex
Microbioticum	Improves resistance	8 herbs, including *Echinacea*, camomile, garlic and ginseng	Put in mouth	Ineko
CaiPan balsam	Circulation in the udder	Japanese peppermintoil	Put on udder	Hemrik products
Cox Uddermint	Circulation in the udder	Japanese peppermintoil	Put on udder	Cox Agri
Dermiel spray	On skin wounds and cuts, reduces formation of callus on nipple tips	Honey, lavender, basil, thyme a.o.	Use externally, spray on udder	AST
EM Nipple dip	Improves skin flora	EM: *Lactobacillus spp.* a.o.	Externally, nipple dip	Agriton
Mint ointment super	Circulation in the udder	Japanese peppermint oil and tea tree oil	Use externally, put on udder	Veeservice IDAC
MS Uddercare	Circulation in the udder	Japanese peppermint oil and eucalypt	Use externally, put on udder	Schippers
Original NJP spray and cream	Circulation in the udder	Japanese peppermint oil	Use externally, put on udder	Veeservice IDAC
Uierbalsem ECOstyle	Circulation in the udder	St John’s wort oil, laurel, camphor, eucalypt, rosemary, cloves and arnica	Use externally, put on udder	ECOstyle

2.10 Skin lesions and swollen hocks

Skin lesions, cuts and wounds can lead to swelling of the hocks.

Management

- Housing: optimise size and litter of the resting areas. Provide ample space for the cow to lie down and get up again.
- Hygiene: provide a clean environment to prevent bacteria from entering skin lesions or the nipples (see the paragraph on udder health).

Natural products

- Herbs such as arnica, camphor and comfrey improve local blood circulation and help against bruises.
- Honey, thyme, lavender and basil have antibacterial properties and improve wound healing.

Product	**Application**	**Composition**	**Use**	**Supplier**
Dermiel woundspray	Antibacterial, improves wound healing	Honey, thyme, lavender and basil, a.o.	External use	AST
Osmonds white oil	Swollen hocks	camphor	External use	Veeservice IDAC Schippers
ProMotion	Swollen hocks	Pepper, mustard, arnica, camphor and comfrey	External use	ECOstyle

Comfrey

2.11 Claw problems

Management

- Housing: prevent wounds on and between claws by providing clean, dry and coarse floors without uneven surfaces. Keep trails and paddocks clear of stones and other (sharp) objects.
- Feed: optimise feed rations to prevent ruminal acidosis, as this has an adverse effect on claw health.
- Hygiene: a clean environment prevents bacteria from infecting claws and surrounding skin.
- Claw care: clip claws regularly.

Natuurproducten

- *Aloe vera* has antibacterial and anti-inflammatory properties and soothes the skin.
- Marigold, camomile and Peru balm have antibacterial properties and sooth the skin

Product	**Application**	**Composition**	**Use**	**Supplier**
BreCalSan	For bedding, grids and floors	Calcium and minerals	Sprinkle in laying areaand/or on bedding	ForFarmers
Intra bath	Prevents problems of the skin surrounding claws	*Aloe vera*a.o.	Foot bath	Intracare
Intra Hoof-fit gel	Prevents problems of the skin surrounding claws	*Aloe vera*a.o.	Put on claw	Intracare
Klausan	Cures problems of the skin surrounding claws	Camomile, marigold, oak bark, Peru bal mand larchresin.	Spray on skin	ECOstyle
M-Mistral	Dries the skin, reduces sources of infection	Diatomite, essential oils	Sprinkle on floor	Olmix
Runderfit	Mortellaro	Composition known at RIKILT institute	In feed	EFS Holland

2.12 Worms and hepatic distomatosis

Management

- Make sure calves and young cattle can build immunity by using a proper pasturing system.
- During distomatosis-season, make sure the animals use only the driest pastures.

Natural products

- Fragrant (lemon balm, garlic), bitter (mugwort, chicory) and tannin-rich plants (silverweed, selfheal) could be planted in the meadow to reduce sources of infection.
- No natural products are on the market that are safe to use for both people and cattle and are lethal to intestinal parasites (endoparasites).

garlic

3 Hygiene and feed quality

3.1 Housing

Management

Hygiene: cleaning the cow beds and milking parlour on a regular basis helps to reduce the number of harmful pathogens, thus reducing the chances of infection.

Natural products

Products based on enzymes have antibacterial properties and break down the biofilm in which bacteria live. After cleaning and disinfection of the resting areas you can apply a mixture of 'good' bacteria. This can improve the balance between healthy and harmful bacteria. Products based on EM (effective micro-organisms) reduce ammonia emissions in a cow house and can lower the risk of mastitis and diarrhoea.

Product	**Application**	**Composition**	**Use**	**Supplier**
Panazym	Curtails bacteria and breaks down microfilm	enzymes	Foam to clean floors	Panagro
Orgaferment	Treatment of floors and straw	EM and yeasts	Spray	Panagro
Orgabase	Treatment of floors and straw	EM and wheat bran	Sprinkle	Panagro

3.2 Fly management

Management

- Hygiene: keep the environment clean and dry and remove manure and feed leftovers.
- Climate: provide proper ventilation and a fresh environment.
- In addition to the above, the number of flies can be managed by providing nesting areas for swallows.

Natural products

Product	**Application**	**Composition**	**Use**	**Supplier**
Agra predatory fly	Natural enemy of stable flies	Predatory flies	Put pupas in the cow house	Agrapharm
Agrapharm predatory wasps	Natural enemy of stable flies	Predatory wasps	Put pupas in the cow house	Agrapharm
Exfly cattle spray	Deters stable flies using odour	Biological lure	Spray	Prolako
Spy	Lure and trap stable flies	Spinosad, from Saccharopolyspora spinosa	Several options, can be sprayed or applied on surfaces or in traps (containers)	Novartis (through vet)

3.3Herbal mixtures for meadows

A large number of herbs can be used to sow in meadows. These herbs may have a direct positive effect on animal health, but they can also work in an indirect manner, for example by improving the uptake of minerals and improving ruminal fermentation.
PureGraze is a herbal mixture for meadows that contains – among others – chicory, parsley, plantain, caraway, stinging nettle and yarrow.

3.4 Methane production

Dairy cattle produce methane, which contributes to the unwanted greenhouse effect. A number of natural products have been tested for their ability to reduce methane production.

Natural products

A number of tropical plants, such as *Moringa oleifera, Picrorhiza kurrooa, Terminalia bellirica* and *Yucca schidigera,* can contribute to a reduction in methane production. Garlic, sunflower oil, coconut oil and a number of other products can improve ruminal function and decrease methane production as well.

Product	**Application**	**Composition**	**Use**	**Supplier**
Allicin /DTS	Reduced production of methane	Garlic extract	Mix with drinking water or put directly in mouth	Cowhealth
De-Odorase	Reduced production of methane	Yucca plant	Mix in feed	Alltech

Yucca

3.5 Silages

Management

- Spread grass or other silage-material well and compact the silage heap properly. Work as fast as possible and put an airtight cover over the heap within the same day.
- Protect the plastic cover with additional measures such as a layer of soil or car tyres.
- The silage heap should be of a suitable height: each week at least 1,25 meter needs to fed to the animals.
- When the silage is too dry or too wet, rotting can occur.
- Check heaps for fungal growth, remove spots on the sides and check maize silages for mycotoxins.

Natural products

Lactic acid bacteria and organic acids lower pH and can prevent rotting (heating, *Clostridium* growth). EM is short for Effective Micro-organisms, which form lactic acid and other positive organic acids. These EM's are added when making silages. Some examples of EM additives can be found in the following table.

Product	**Application**	**Composition**	**Supplier**
Bon Silage Plus	Improves fermentation and reduces heating	EM: lactic acid bacteria	Barenbrug
EM-silage	Quickly lowers pH	Bacteriaand yeasts	Agriton
Feedtech silage F300	Quickly lowers pH	EM: *Pediococcus&Enterococcus*	Delaval
Feedtech silage F400	Prevents heating	*EM: Lactobacillus buchneri*	Delaval
Sil-All Fireguard	Prevents heating, improves silage quality in maize silage	Organic acids and lactic acid	Alltech
Sil All	Improves quality of grass or hay silage	Bacteria and enzymes	Alltech
Pioneer Silage 11A44	Slows heating in silage with a dry matter content > 30%	EM: *Lactobacillus buchneri*	Pioneer
Silage Inoculant 1188	Quickly lowers pH	*Lactic acid bacteria*	Pioneer

Product	Application	Composition	Supplier
Silage Inoculant 11G22 WOB	Breaks down cellulose	EM and enzymes	Pioneer
Lalsil dry	Improves fermentation in silage heaps with low sugar content and high percentage of dry matter	EM : Cellulolytic enzymes and lactic acid bacteria	Lallemand SA
Lalsil PS	Improves fermentation	EM: *Lactic acid bacteria*	Lallemand SA
Lalsil CL	Improves fermentation in silage heaps with low sugar content and average percentage of dry matter	EM: *Lactic acid bacteria*	Lallemand SA
Laslil fresh	Diminishes heating in maize silages	EM: *Lactobacillus buchneri*	Lallemand SA
Ecosyl 66	Improves fermentationof grass or hay silage	EM: *Lactobacillus plantarum*	Ecosyl
Ecobale	Improves fermentation, reduces heating	EM: *Lactobacillus plantarum, Serratia rubidaea, Bacillus subtilis*	Ecosyl
Double action Ecocorn Ecosyl Ecobale	Improves fermentation, reduces heating in maize silages, grass or hay silage,bales	Potassium sorbate, lactic acid bacteria	Ecosyl

Annex 1: Producers and suppliers

Producenten	Leveranciers	Producten
Aavet www.aavet.nl +31 321-326 316	Vet	AA stop powder
Agrapharm Veeservice Idac	Macrovet www.macrovet.nl + 31 73-511 9977 Veeservice IDAC www.veeserviceidac.nl +31 6-51 545 721	Agra predatory fly Agrapharm predatory wasp
Agriton	Agriton www.agriton.com +31 561-433 115	EM Silage EM Nipple dip
Agrivee www.agrivee.nl	+31 6-54901435 +31 516-480919	Biopect
Alltech www.alltech.com +31 180-411033		De-odorase Mycosorb Immunate Rumenate
AST Farma www.astfarma.nl +31 348-563434	Vet	Dermiel spray
Barenbrug	Barenbrug www.barenbrug.nl + 31 24-34 88 100	Bon silage plus Bon silage
Boerenwinkel www.boerenwinkel.nl +31 548-545 277	Boerenwinkel www.boerenwinkel.nl +31 548-545 277	Licodiar Liquid Licopect Holpect
Cowhealth	Cowhealth www.cowhealth.nl +31 6-2454 8292	Allicin/DTS
Cox Agri www.cox-agri.nl	Cox agri +31 6-1359 5498	Cox uddermint
Delaval	Delaval +31 521-537 500	Feedtech silage
ECOstyle www.ecostylevoordieren.nl 0516-567 760	Vet Farm stores Veeservice IDAC www.veeserviceidac.nl +31 6-51 545 721	Coffea Colosan Immulon Klausan Melissengeist Ademspray

	Agradi www.agradi.nl +31 73-522 66 11	ProMotion Udder balm
Ecosyl	Throughfeed suppliers	Ecosyl 66 Ecobale
EFS Holland www.efs-holland.nl	EFS Holland +31 345-535 498	Runderfit
ForFarners	www.forfarmers.eu +31 573-288800	BreCalSan
Hemrik products	Hemrik +31 518-401 514	CaiPan udder balm
Kanters	www.kanters.nl + 31 499-425600	Aeroforte
Ineko	www.microbioticum.eu + 31 592-371741 +31 6-2248 3674	Microbioticum
Intracare www.intracare.nl + 31 413-354105	www.bio-enterprise.nl +31 546-666666 Veeservice IDAC +31 416-379955	Intra-bath Intra-Hoof-fit
Lallemand	Hendrix UTD www.hendrixutd.nl through dealernetwork	Lalsil dry Lalsil PS Lalsil CL Lalsil fresh
Macrovet Veeservice IDAC	www.macrovet.nl + 31 73-511 99 77 Veeservice IDAC www.veeserviceidac.nl +31 6-51 545 721	Biopect
Olmix	Olmix www.Olmix.com +31 26-3842015 Schippers www.schippers.nl + 31 497-339 771	M-Mistral
Novartis Animal Health www.ah.novartis.com	+ 31 76-5330020	Spy
Panagro www.panagro.be	Panagro +32- (0)33 149 693	Panazym Orgaferment Orgabase

Pioneer www.pioneer.com	Pioneer NL + 31 6-513 511 33	Pioneer silage
Prolako www.prolako.nl	Prolako + 31 516-492202	Exfly cattle spray
PureGraze www.puregraze.com	(products, seed) + 31 6-1314 6161	Herb seeds Clover seeds
J. Reinsma Beheer BV www.impactpoeder.nl	J.Reinsma Beheer BV + 31 512-541314	Clay / carbon
Schippers www.schippers.nl + 31 497-339 771	Schippers www.schippers.nl + 31 497-339 771	Carbovet-P MS Aeroplus Cow house air treatment Osmond's white oils M-Mistral
Veeservice IDAC www.veeserviceidac.nl	Veeservice IDAC + 31 416- 379955	Bovi-C3 Bovin-stop Enterocin-C Osmond's white oils
Virbac www.virbac.nl	Through vet OrVirbac : + 31 342-427 127	Powder nr. 4 Wesdigest
Vitamex	Vitamex www.vitamex.com +32- 9 282 9748	Aromabiotic Cattle

Annex 2: Background information on natural products

Choosing natural products

Organic agriculture prefers natural products when treating animals. But what exactly is a natural product? The distinction between natural and non-natural products can be made in two ways; based on technical properties of the product or based on the motivation of the user.

Technical distinction: production methods

The raw materials for natural products are derived from nature. This means: the molecules have not been changed in a laboratory, the product is of *biogenic origin*. A simple example is willow bark. This is a natural product that has been used for thousands of years to boil a tea that treats fever and pain. This tea contains many active ingredients. One of these was isolated - salicylic acid – and from 1900 onwards sold as medication. This isolated substance caused severe stomach aches, so improvement was necessary. An acetic group was added to the salicylic acid; we still know this combination as aspirin. This is no longer a natural product; these days it is made entirely out of synthetic substances.

Another example: To isolate carvacrol (a disinfectant) from oregano we also need a laboratory. To some people that means this substance is no longer natural. The distinction is not made in the same manner by everyone. Carvacrol can be produced synthetically from different raw materials than oregano. In those cases it certainly isn't a natural product, but there is no chemical difference with 'naturally produced' carvacrol.

Phytotherapy uses plant products that still have a natural complexity. The willow bark example shows that natural products are not always harmless. It is also important to know which parts of the plant can be used and how to prepare them.

Motivational distinction: different objectives

Natural products can be opted from for a variety of reasons. Some examples are:

- Supporting the 'green' company image;
- Preventing or curing diseases without leaving harmful residues (no waiting time before products can go to market);
- Improving product quality (f.i. by increasing the unsaturated fatty acid content);
- Improving animal health without using environmentally harmful substances;
- Using methods and materials that would be available to the animal in the wild;
- Promoting animal health through management and relying as little as possible on medical treatments;
- Dealing with health issues while they are still small (instead of waiting for the situation to get out of hand and only treatable with fast-working medication).

Usually, complex natural products such as phytotherapeutics are chosen in organic animal husbandry. Singular synthetic products such as carvacrol or synthetic vitamins are a lot less popular. Preference lies with organically grown herbs. The sector aims to use 100% organically produced feed by 2012. Feed additives used to improve health should also be fully organic by then.

Important groups of natural products

Herbal mixtures or phytotherapeutic products are generally made from parts of herbal plants but can also be prepared from trees, algae, seaweed, lichen, yeasts or fungi. These products are often added to feed to improve taste and smell. Fragrant plants are used mostly, although odourless herbal mixtures do exist.

Because each plant can contain a variety of active substances (Annex 4), one herb or herbal mixture can have a number of effects. One plant can - for instance - increase appetite, have antibiotic and anti-inflammatory properties and calm coughing. A herb can be used in the form of dried or ground seeds, flowers or roots. It is also possible to derive an extract from it, with a high concentration of active ingredients and thus a stronger effect. Essential oils consist of isolated volatile (fragrant) components. Oregano oil is currently a much-used additive in animal feed.

A number of plant products cause very different reactions in different animal species. Poultry, for instance, has no problems with henbane, which is poisonous to many mammals. But poultry is also much more sensitive to saponins. Different products from the same plant, may cause very different reactions. Also, preparation and dosage influence the effect of the product.

Some herbs – garlic and cinnamon for instance - contain active substances that also combat pathogens when they have not (yet) been absorbed in the intestines. They resemble prebiotics in the sense that they hardly influence ‘good’ intestinal bacteria, such as lactic acid bacteria.

Phytogenic substances are very pure products that have been distilled from a plant extract (up to almost 100% purity). Examples are allicin from garlic, inulin from chicory, lignin from straw or wood and carvacrol from oregano. An interesting group of phytogenic substances are beta-glucanes, which are derived from the inside of yeast cell walls and from certain fungi. Beta-glucanes are used to increase resistance and bind toxins.

NGPs
A new group of additives is called ‘Natural growth promoters’ (NGP). These substances are also used in conventional agriculture to replace antibacterial growth promoters. NGPs often contain herbs that have long been used in natural medicine and organic agriculture. Examples are yarrow and garlic. A new phenomenon is the large-scale use of oregano oil and one of its substances, carvacrol.

Probiotics are feed supplements that consist of live micro-organisms, such as lactic acid bacteria, enterococci or beer yeast cells. Probiotics are used to support or recover the natural microbiological balance in the human or animal intestinal tract. Using probiotics is particularly helpful after an intestinal infection and possible use of antibiotics. A healthy intestinal flora can lead to a better general health, better growth and higher production, thanks to improved digestion and immunity.

Prebiotics are substances that enhance the development of the intestinal flora, without being absorbed by the animal. Indications are, that prebiotics also stimulate immune responses and prevent harmful bacteria from sticking to the intestinal walls. Prebiotics are generally phytogenic products. Examples are:

- Carbohydrates from yeast cell walls (MOS: Mannose oligosaccharides);
- Carbohydrates from plants, such as the decomposition products of inulin from Jerusalem artichoke or chicory roots (FOS: Fructooligosaccharides). FOS improves calcium uptake, but may be less specific for certain bacteria than MOS;
- Pectins (heterosaccharides) from citrus fruits, apples, potatoes or carrots.

Prebiotics and probiotics combine well; when used together they are called synbiotics of symbiotics.

Organic acids are used to improve digestion and added to feed or drinking water. Examples are folic acid, citric acid and long-chain fatty acids. These acids are often given as a salt. Organic acids lower the pH of the stomach and make feed more tasty and less perishable. In a more acid intestinal tract, the multiplication of bacteria such as E-coli and Salmonella slows down. Herbal products such as apple vinegar, wine vinegar and citrus extract work in the same way, because they mainly consist of organic acids.

Enzymes are proteins that work as catalysts. These substances manage a chemical conversion without being converted themselves. Examples are the enzymes that split starch, fat and proteins in the stomach, to help digest food. Enzymes are usually provided as chemically pure products. Herbal mixtures of papaya and pineapple also contain protein-splitting enzymes; these are generally used against worms which are damaged by these enzymes. Enzymes for floor disinfection are also available on the market.

Other products mentioned in this guide are used for cleaning and disinfection and to improve the floor and litter. These are products taken from nature without much processing, such as clay, sand, minerals, enzymes and acids.

Final remarks

Please note that homeopathy is not included in this booklet, because it operates based on a specific philosophy.

Increased welfare and well-being of animals have a proven positive influence on disease resistance. This means that many simple and easily used products can be effective; including attention and care.

Annex 3: Alphabetical list of herbs

The following pages contain an alphabetical list of herbs.
The list is not definitive or complete, as products change continuously. Not all products are available everywhere (yet) and each plant contains more active substances – such as vitamins or minerals - than those that are mentioned here. The list gives a general indication of the herbs in natural products and cannot be used as the only guide for using a certain herb or natural product.

Additional information on the active substances mentioned in the list:

Alkaloids are small molecules that contain nitrogen. Often these substances influence the nervous system, sometimes in such a powerful way that are considered poisonous (i.e. caffeine or nicotine).

Bitter substances. Some plants have a bitter taste and increase the excretion of saliva and other digestive fluids through their effect on the taste buds. These bitter substances are small compounds that are poisonous in high dosages; the bitter taste signals danger. Bitter substances do not belong to a single chemical group.

Essential oils of plants are mixtures of volatile substances; they are what gives the plant its fragrance. These substances can differ enormously, but they are all small compounds. Some are very strong (like camphor) or very antibiotic (carvacrol or thymol). Some fragrances increase appetite, because they stimulate the secretion of digestive fluids. Other stimulate urine or sweat production.

Flavonoids provide flowers with a yellow or pink colour. Many flavonoids work as antioxidants (anthocyanin is an example). Some (isoflavones) are similar in chemical structure to oestrogen. In the plant, flavonoids are attached to sugar molecules.

Silicic acid hardens plants; it can be found in wheat stems, plantain, polygonum and horsetail for instance. In popular medicine silicic acid is used for stronger hooves, horns, hair, skin and feathers. Not much research has been done into this substance.

Tannins are large, somewhat acidic compounds, often made up of flavonoid-like substances. Tannins cause proteins and alkaloids to precipitate. This way, food becomes less digestible and tannins can have a detoxifying effect. They reduce diarrhoea and have antibacterial properties.

Saponins cause a soapy foam; when you rub plants containing saponins between your hands with water they de-grease your hands. Saponins bind both fat and water. When used in a herbal mixture they cause other substances to get absorbed. Saponins can irritate mucous membranes. Saponins from plants are often very large and complex molecules that are not absorbed themselves. In plants they often derive from hormone-like (steroid) compounds.

Mucilage consists of long carbohydrate chains that can create a gel with water (like linseed when it gets boiled). Plants containing mucilage have a soothing effect on, for instance, sore throats. In a high dosage, these substances have a laxative effect.

English common name	Botanical name	Part of the plant used	Main active substances	Application	English common name
Absinthe wormwood, Wormwood, Absinthium	*Artemisia absinthium; A. spp.*	herb	Bitter substances (f.i. artemisinin), essential oil (mainly thuyon and azulene)	RinderZucht, Ursonne Rinder, Ursonne Rinder Graviben, Schweizer Kräuter Fit, Voralberger Bronchial-Kräuter	Digestion, increases appetite, against parasites. The herb itself is also used externally against parasites (from popular medicine)
Algae	*Diatomeae spp, Fucus spp, Laminaria spp*	cells	Dead cells contain a lot of chlorophyll, silicic acid (Diatomea) and iodine (Fucus).	Tasco; Spicemaster; RinderZucht Kräuter	Increased uptake of feed, appetite and growth. Used against stress, supports resistance and metabolism, improves lactation.
Alder	*Sambucus nigra*	Flower, berry	Essential oil 0,02-0,15%, flavonoids	Brunstpulver (alder blossom)	Improves metabolism, circulation, endocrinal glands.
Angelica	*Angelica sp.*	Root, seeds	Essential oil 1%, cumarine 0,08%, bitter substances	Melissengeist-Ademspray (Angelica oil)	Relieves respiratory problems, especially for young animals
Anise	*Pimpinella anisum*	seed	2-6% essential oil (containing 90% transanethol), 10-30% fatty oil and 20% proteins	Colosan (aniseoil), Cuxarom, P.E.P. 1000	Reduces methane production, prevents ruminal tympany, flatulence and digestion problems, improves growth.
Arnica	*Arnica montana*	flower	Bitter substances (sesquiterpene lactones), flavonoids and essential oil	Acetatmischung, Arnikavet, Coolspray (extract), Euterbalsam (tincture), Leuca creme, Udder balm ECOstyle	Ointment used against infections of the claws and joints, tendon problems and bruises. Also used in mixed ointments to cool udders, treat mastitis and other udder diseases, for daily udder hygiene and to improve circulation in the udder.
Asiatic pennywort, gotu kola	*Centella asiatica*	Leaves	Triterpenes, saponins	Cothivet	Skin care
Blue cohosh	*Caulophyllum thalictroides*	Bark of roots	Alkaloids, saponins	Afterbirth capsule	Prevents and treats uterus infections
Calamus or sweet flag (do not gather in the wild – poisonous chemotype)	*Acorus calamus*	Root	Essential oil, 5% (mainly asaron), bitter substances	Powder nr. 3, Powder nr. 4, Fyto-stop, Stop	Stimulates rumen, prevents ruminal acidosis, diarrhoea in animals > 100 kg
Camphor tree	*Cinnamonum camphora*	Resin from wood	Terpenoids (camphor)	Acetatmischung, Euterbalsam, Camphor Ichtammol ointment, Camphor Ichtyol ointment, Restitutions Fluid, Elemi udder ointment	Udder care (mastitis), hoof ointment, skin infections and ointment for the joints, stimulates circulation of the muscles.
Camomile	*Matricaria chamomilla*	Flower	0,3-1,4% essential oil, (containing chamazulene and bisabolol), flavonenes, cumarines	Klausan tincture, Wundbalsam, Microbioticum, Cleanspray	Wound care, claw problems, general health and production, immunity, infections, wound disinfection, hoof care.

Cat's claw	*Uncaria tomentosa*	Root, bark	Alkaloids (differs between chemotypes, up to 3%), β-sitosterol, flavonoids, tannins	Immunall	Resistance, prevention of diseases
Cayenne	*Capsicum frutescens*	Fruit	0,6-0,9% capsaicin, vitamin C	Brunstpulver	Improves metabolism and circulation of the endocrinal glands.
Centaury	*Erythrea centaurium*	Herb	Bitter substances	RinderZucht, Schweizer Kräuter Fit, Ursonne Rinder, Ursonne Rinder Graviben, Ursonne Rinder Premium-B, Voralberger Bronchial-Kräuter	Digestion, improves appetite, general wellbeing and health.
Horse chestnut	*Aesculus hippo-castanum*	Seed	saponins	Cothivet	Skin care, skin swellings.
Sweet chestnut	*Castanea sativa*	Leaves, bark	Tannins 10%, flavonoids	Chestnut Extract, Herbatan	General health and production, stimulates immunity, digestion, liver and milk production.
Chicory	*Cichorium intybus*	Roots (is also eaten in the meadow)	Bitter substances, flavonoids, inuline 30%	Fructomix, P.E.P. 1000, Parasan, Eudigest;	Optimises intestinal flora (prebiotics)
Cinnamon	*Cinnamonum zeylanicum*	Bark	Essential oil 1-2% (containing 75% cinnamaldehyde and 5% eugenol), tannins 2%	Enteroguard, Melissengeist-Ademspray (oil), Rurex (Chinese cinnamon oil), RepaXol (oil, mixture of oregano, cinnamon, thyme and capsicum), Colosan (cinnamon oil).	Diminishes methane production, prevents tympany, flatulence, against diarrhoea, stimulates growth, digestion, absorption of nutrients, low cell count, start of breathing.
Coffee	*Coffea sp.*	Bean	Caffeine, lipids, flavones, proteins, minerals (K, Mg, Mn)	Coffea and Immulon, Coffea praeparata inject	Fitness, immunity, improves appetite, functioning of stomach and intestines, metabolism.
Coriander	*Coriandrum sativum*	Seed	Essential oil 0,2—1,6 % (70% linalool), fatty oil 15-25%, proteins 11-17%	Melissengeist-Ademspray (oil)	Respiratory problems, especially in young animals
Cloves	*Eugenia caryophyllata*	Flower	Essential oil 20% (containing 90% eugenol), tannins 10%, flavonoids	Euterbalsam (clove oil), Melissengeist-Ademspray (oil), Udderbalm ECOstyle	Mastitis, circulation udder, respiratory problems, especially in young animals (spray).
Dandelion	*Taraxacum officinale*	Root or herb, is also eaten in the meadow	Inulin (root contains up to 40% in autumn), bitter substances, flavonoids, several vitamins and minerals	CS 82, Herbatan, Ketosan	In case of Negative Energy Balance, ketosis and acetonaemia. Stimulates immunity, digestion, liver function, milk production and has a prebiotic and probiotic function.
Echinacea, purple coneflower	*Echinacea purpurea*	Root	Essential oil, polysaccharides, inulin	Microbioticum, Bronchimax, Immulon, Immunal, Elemi udder ointment, Vita-Quick-K	General health and production, immunity, respiratory tract, mastitis

Eucalypt	*Eucalyptus globulus or saligna*	Leaves	Essential oil 0,5-7% (75% cineol), tannins	Uierbalsem ECOstyle, Eurobalsam (eucalypt oil), Bremsen-Frei Plus, Acetatmischung	Improves respiration, diminishes mucus, against mastitis, improves circulation in udder, protects against flies and horseflies. When used as ointment: cools and mild disinfection for claws and joints.
Fennel	*Foeniculum vulgare*	Seed	Essential oil 2-6% (containing 60% trans-anethole), 15% fatty oil	Colosan (fennel oil), Cuxarom, Digestarom, Melissengeist-Ademspray (fennel oil)	Prevents tympany and flatulence. Against digestion problems and respiratory problems – especially in young animals.
Fenugreek	*Trigonella foenum graecum*	Seed	Mucilage 30%, protein, fatty oil, saponins 3%, bitter slubstances	RinderZucht Kräuter, Schweizer Kräuter-Fit, Ursonne Rinder, Ursonne Rinder Graviben, Ursonne Rinder Premium-B, Voralberger Bronchial-Kräuter	General resistance and energy, digestion.
Garlic	*Allium sativum*	Bulb	Several sulphur compounds (allicin, thiocyanates), vitamins (A, B1, B2 , C), minerals (K, Fe, S, J, C, P, Se)	Enteroguard, Allicin/Allimax, Cuxarom, Immunall, Microbioticum	Reduces methane production, improves uptake of nutrients, activates immune system, improves general health and growth, antibacterial.
Gentian	*Gentiana lutea*	Root	Bitter substances	Ketosan, Powder nr. 4, Rumigest-Plus	Stimulates rumen function and flora, improves appetites, in cases of Negative Energy Balance, Ketosis and acetonaemia.
Ginseng	*Panax ginseng*	Root	Saponins, 1,5 % specific sugars, essential oil	Viobioticum, Immunall	Growth of calves, general immunity and energy.
Goldenrod / woundwort	*Solidago virgaurea*	Herb	Saponins, tannins, essential oil about 0,5%, flavonoids	Afterbirth capsules, Mammicurine - 880 injector	Birth, start of dry period, mastitis.
Heartsease	*Viola tricolor*	Herb	saponins, flavonoids, salicylates	Microbioticum, Immunnall	Resistance, activates immune system, prevents disease
False Helleborine	*Veratrum album*	Root	Alkaloïds (poisonous!)	Wesdigest (tincture of false helleborine)	Improves ruminal function, digestion and stimulates cud chewing. Use only registered tinctures as this is a poisonous plant!
Common juniper	*Juniperus communis*	Fruit	Essential oil up to 2% (mainly monoterpene carbohydrates), up to 40% sugars	Brunstpulver	Improves metabolism, circulation of (sexual) endocrinal glands.
Savin Juniper	*Juniperus sabina*	Flowering heads	Essential oil (very strong – **do not make or gather at home**)	Uterale	To counter retention or to help deliver the afterbirth. Use only registered products!
Laurel	*Laurus nobilis*	Leaves	Essential oil 2% (containing 50% cineol), bitter substances, flavonoids	Euterbalsam, Laurel ointment (oil), Traxaxan (laurel spray), Udderbalm ECOstyle	Mastitis, hoof and claw treatments, circulation of udder.

Lavender	*Lavendula officinalis*	Flower	Essential oil 1-3% (containing camphor and cineol a.o.), 12% tannins	Bremsen-Frei Plus (lavender oil), Cothivet (l lavender oil), Leuca creme (lavender oil), Septobion (l lavender oil), Elemi udderbalm (elemi is a soft resin)	Spray: protection against flies, mosquitoes and horse flies. Balm and oil: skin care, skin lesions, mastitis, warms skin, reduces cell count, treats udder problems, daily udder hygiene.
Lemon	*Citrus limon*	Peel	Essential oil, 2,5% (terpene,α-limonene), flavonoids	Melissengeist-Ademspray (oil), Eucanel, Herbatan	Against respiratory problems (especially in young animals), disinfects cow house air, stimulates immune system, digestion, liver, lactation
Lemon balm	*Melissa officinalis*	Leaves	Essential oil, 0,05-0,8% (citral 50%), tannins 4%, flavonoids	Brunstpulver, Melissengeist-Ademspray (oil)	Improves metabolism and circulation in endocrinal glands, respiration issues, immunity in young animals
Linseed, flax	*Linum usitatissimum*	Seed and linseed oil	Seed: 25%*indigestible carbohydrate* , 40% fatty oils (containing a lot of unsaturated fatty acids), 25% proteins	Colosan	Reduces methane production, prevents tympany (when used in combination with other herbs). Linseed oil is a laxative and improves the condition of the coat.
Liquorice	*Glycyrrhiza glabra*	Root	2 - 15 % saponins, 0,5 – 2% flavonoids and 10% sugars	Voralberger Bronchial-Kräuter	Infections of the intestinal tract or treatment of respiratory problems
Marigold	*Calendula officinalis*	Flower	triterpene glycosides, flavonoids, luteins (carotenoids)	Mammicurine-880 injector, Klausan tincture, Septobion, Wundbalsam, afterbirth capsules.	mastitis (all manifestations), claw problems, foot and hoof skin and coat problems, at birth and at the start of the dry period. Also mild disinfectant used on wounds and skin lesions.
Milk thistle	*Silybum marianum*	Seed	Silymarine (mixture of 3 flavonollignans), 25% fatty oil, 30% proteins	Bronchimax, Parasan, RinderZucht Kräuter, Schweizer Kräuter-Fit, Ursonne Rinder (- Graviben), Ursonne Rinder Premium-B, Immunal	Digestion, liver function, circulation, resistance.
Mint	*Mentha piperita*	Herb	Essential oil 1-3 % (variable, usually 50% menthol), tannins about 10%, flavonoids	Aeroforte, Cool-spray (peppermint oil), Mint condition, Uddermint (Japanese peppermint oil), Cai Pan (Japanese peppermint oil), Uddermint ointment	Respiratory tract (lessens mucus), lowers temperature of the udder, mastitis (cools and disinfects).
(Stinging) nettle	*Urtica dioica*	Leaves (is also eaten in the meadow)	Folic acid, acetic acid, histamine, choline, silicium (in the nettles) and many vitamins, minerals (mainly iron) and tannins	Brunstpulver, Aufbau-Konzentrat, Eudigest, RinderZucht Kräuter, Ursonne Rinder Graviben, Voralberger Bronchial-Kräuter,	Stimulates circulation in endocrinal glands, improves calcium metabolism, improves bone development, improves lactation, protects intestines, supports metabolism, increases appetite, adds minerals and trace elements, supports respiratory tract, general health.
Nutmeg	*Myristica fragrans*	Seed, Seed aril (mace)	Essential oil 7 - 15 % (containing 80% pinene en camphene, 6% borneol), 35% fatty oil, 30% starch	Melissengeist-Ademspray (oil)	Respiration, especially in young animals (do not use separately, only in spray)

Oak	*Quercus sp.*	Bark	Tannins	AA stoppowder, Durchfallpulver N, Fyto-stop powder, Klausan tincture (with larch resin, camomile and marigold), Rurex, Wundbalsam, Stop	Prevents ruminal acidosis, against diarrhoea in animals larger than 100 kg, improves digestion. External use against claw problems, skin disease, coat and claw care and as a mild disinfectant for wounds.
Oregano, wild marjoram	*Origanum vulgare*	Herb	Essential oil (especially carvacrol and thymol), tannins	Dosto (oregano-oil), P.E.P. 1000 (oil), Ropadiar (oil)	Improves digestion, mildly antibacterial, stimulates growth, against mastitis and coccidiosis.
Plantain species	*Plantago species*	Herb, is also eaten in meadow	Silicic acid, tannins	No specific products for cattle, but is also eaten in meadow	Against diarrhoea, improves intestinal health, metabolism.
Rosemary	*Rosmarinus officinalis*	Leaves	Essential oil 1 - 2,5% (mainly camphor, borneol, cineol), tannins	Acetatmischung (oil), Brunstpulver, Cothivet (oil), Euterbalm (oil), Multicon, Parasan, Udderbalm ECOstyle	Ointment for skin, claws and joints. Improves metabolism, appetite and digestion. Fertility of young cattle, circulation in the endocrinal glands, circulation in the udder and mastitis.
Sage	*Salvia officinalis*	Leaves	Essential oil 0,5 - 2,5% (mainly thuyon and cineol), tannins, phyto-oestrogens	No specific products for cattle available.	General health and production, anti-parasitic, anti-bacterial, at start of dry period (known in popular medicine)
St John's wort	*Hypericum perforatum*	Herb, flower	Hypericins, tannins, flavonoids.	Euterbalm (oil from flowers), Udderbalm ECOstyle	Mastitis, circulation in udder
Tea tree	*Melaleuca alternifolia*	Leaves	Esssential oil	Elemi ointment, Eucanel, Leuca cream	Anti-inflammatory and anti-bacterial.
Thyme	*Thymus vulgaris*	Leaves	Essential oil 1-4% (thymol about 50%, carvacrol about 10%), flavones, tannins	Bronchimax, Cothivet (oil), Cuxarom, Digestarom, Wundbalsam (oil)	Respiratory problems, disinfects wounds, cares for skin and coat, improves digestion and intestinal health.
Common tormentil	*Potentilla erecta*	Root, also eaten in the meadow	Tannins	Boviferm plus, CS 82	Diarrhoea in calves.
Turmeric	*Curcuma species*	Root	5% curcumines (yellow colour, polyphenols), 10% essential oils	No specific products available for cattle.	Liver function, digestion, general health, chronic obstructions of respiratory tract
Valerian	*Valeriana officinalis*	Root	Essential oil and several plant-specific substances	No specific products for cattle available.	Relaxing, stress reduction
Walnut	*Juglans regia*	Leaves	Naphthoquinones, flavonoids, tannins	Immunall	Activates immune system, prevents diseases. External use against parasites and skin problems
Willow	*Salix spp (a number of species are used)*	Bark	Salicylates, tannins	No product available for cattle, twigs may be given to chew on	Against pain, fever and infection. Improves general well-being.
Yarrow	*Achillea milefolium*	Herb (is also eaten in the meadow)	Essential oil 0,2% (up to 40% chamazulene), bitter substances	Brunstpulver;	Improves digestion, metabolism, circulation of the endocrinal glands

Yeast	*Saccharomyces spp*	Cells	Used as a probiotic (living organism), source of vitamin B, or as a prebiotic (only cell walls – beta glucanes)	Herbavit, Progut, Schweizer KrauterFit, Sel-Plex, Diamond, Fyto-stop, Safmannan, Voralberger Bronchial-Kräuter, Yeasec	Probiotic, stimulates rumen, supports resistance, metabolism, skin metabolism, building of vitamin reserves, increases appetite, supports respiratory system, general health, against diarrhoea (animals > 100 kg), improves intestinal flora, improves growth and production.
Yucca	*Yucca species*	Root	Saponins	De-odorase	Reduces methane production, reduces ammonia smell in urine and excrements.