

# Integrating Livestock



# Principle: Integration of Livestock



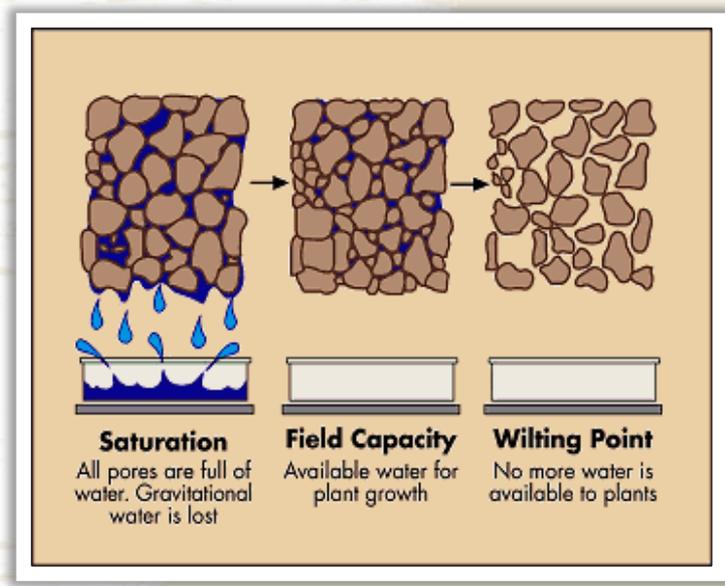
Biological Fertility/Humus



Weed Control



Pest control



Water Conservation

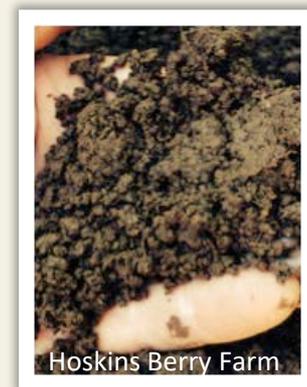
# Fertility Practices: Integration of Livestock Lessons from the Natural World



Grassland



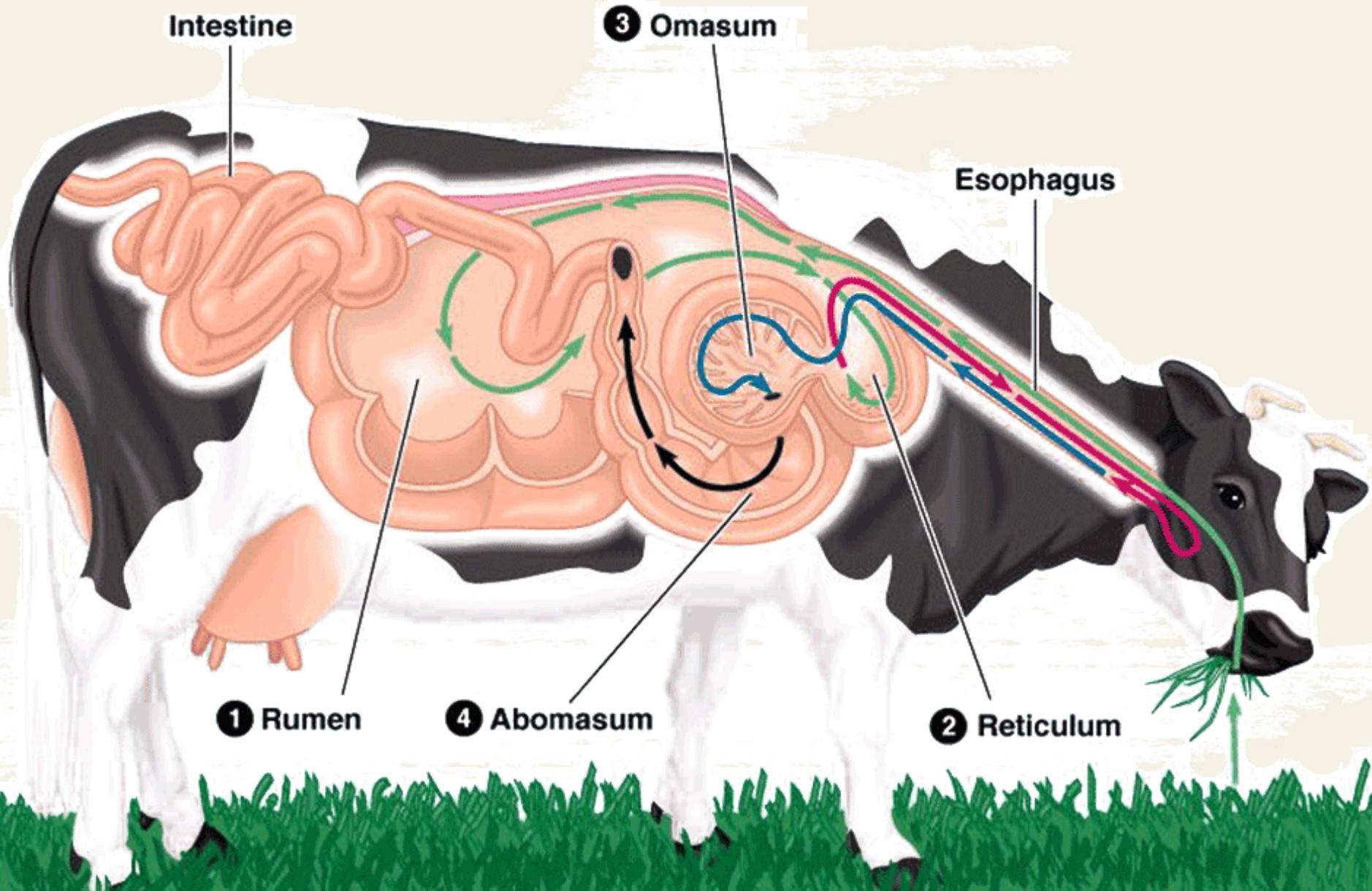
Ruminant



Humus

The fertility contribution of livestock is not only the manure produced but also the contribution of sod/ pasture into the crop rotation. Sod with grazing animals is one of nature's way of building the organic fraction inherent to a soil. A classic example of this are the grassland plains of North America, the soils of which were built by grasslands and grazing animals such as Bison being herded by predators. Mimicked in a farming system the rotation of sod through the system along with the grazing of the sod by livestock not only addresses fertility via the humus that is created but also weed control, pest control and water conservation via this duality present in the crop rotation.

# The Beauty of Rumen



# Integrating Livestock



Integrate farm animals back into a living farm landscape



Rather than confining them in CAFO's

## Integration of Livestock:

Ruminants are not the only animals that play an important role



CERTIFIED  
BIODYNAMIC®

# Integration of Livestock: Conversion

## CONDITIONS ALLOWING PRODUCT TO BE MARKETED AS DEMETER CERTIFIED

Milk / Fiber	Must be managed to Demeter Standard for 12 months.
Meat	Managed to Demeter Standard from last 1/3 of gestation. Imported meat animals cannot be certified if not already Demeter certified Biodynamic or certified organic at a minimum. If certified organic then must be managed to the Demeter Standard for a minimum of 1 year.
Meat poultry and fowl	Day old chicks managed to standard until slaughter. On farm hatching preferred. .
Eggs poultry and fowl	Day old chicks. Certified organic pullets not over 18 weeks old.

## Appendix F: CALCULATION OF STOCKING RATES

The stocking rate takes into account the development and maintenance of soil fertility. The maximum amount of nitrogen and phosphorus that may be supplied by way of the fertilization used may not exceed the amount that would be produced by those animals that the farm could support from its own fodder production. Manure Units - measurements of fertility potential - are used to determine stocking rates for the various animal types. One manure unit is equivalent to 176 lbs of N and 154 lbs of P<sub>2</sub>O<sub>5</sub>.

The stocking rate is calculated utilizing Livestock Units (LU) and the corresponding annual production of Manure Units (MU), associated with various animals. One LU excretes .7 MU annually. The maximum stocking rate may not exceed 0.8 Livestock Units/Acre (.56 manure units/acre) if feed is imported. This is the equivalent of 100-lbs/ acre of applied N and 87-lb/ acre applied P<sub>2</sub>O<sub>5</sub>. Note that this stocking rate might not be possible in all climates. The maximum allowed may need to be reduced if conditions require it in order to maintain the health of the farm.

<b>Stocking Rate: Animal type</b>	<b>LU/animal</b>	<b>Acres/animal</b>	<b>Animals/acre</b>
Breeding bulls	1.2	1.50	.66
Cows	1	1.25	.80
Cattle over 2 years old	1	1.25	.80
Cattle 1-2 years old	0.7	.87	1.14
Calves	0.3	.38	2.60
Sheep and goats up to 1 year old	0.02	.03	40.0
Sheep and goats over 1 year old	0.1	.13	8.0
Horses under 3 years old and young horses	0.7	.87	1.14
Horses, 3 years and older ponies and small breeds	1.1	1.42	.7
Pigs for meat production (45-110 lb.)	0.06	.08	13.0
Pigs for meat production over 110 lb.	0.16	.20	5.0
Breeding boars	0.3	.39	2.6
Breeding sows (including piglets to 45 lb.)	0.55	.67	1.5
Breeding sows without piglets	0.3	.38	2.6
Piglets	0.02	.03	40.0
Laying hens (without replacement stock)	0.0071	.009	112.6

# Integration of Livestock: Applied Fertility Grazing Animals

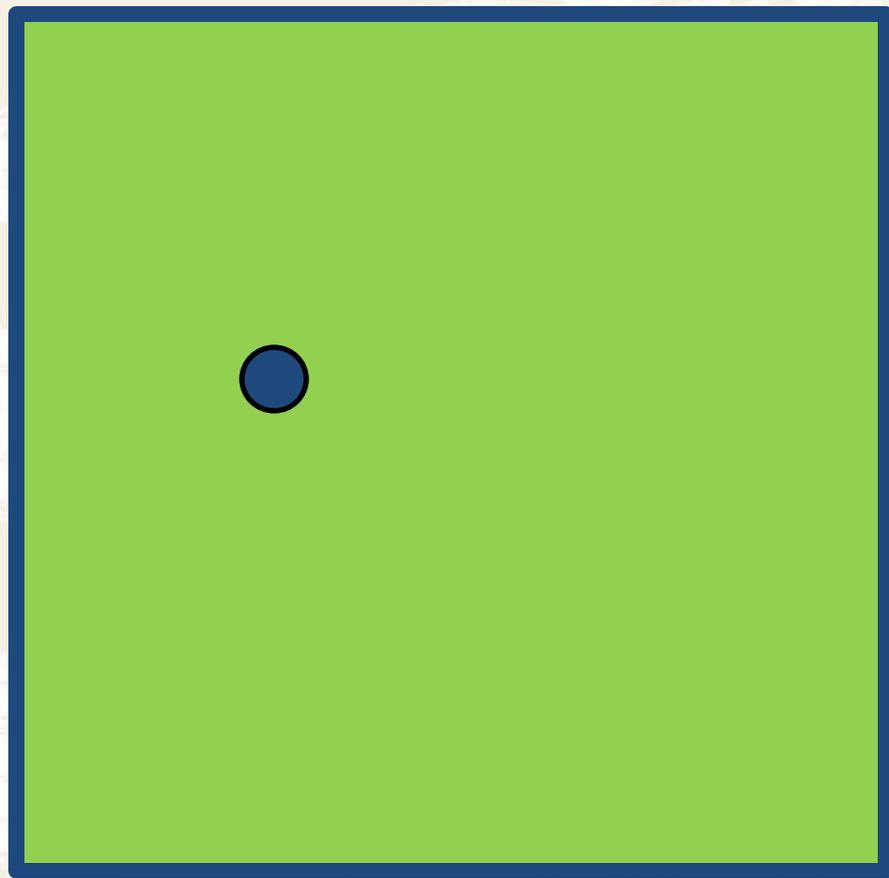


Photo courtesy of The Savory Institute

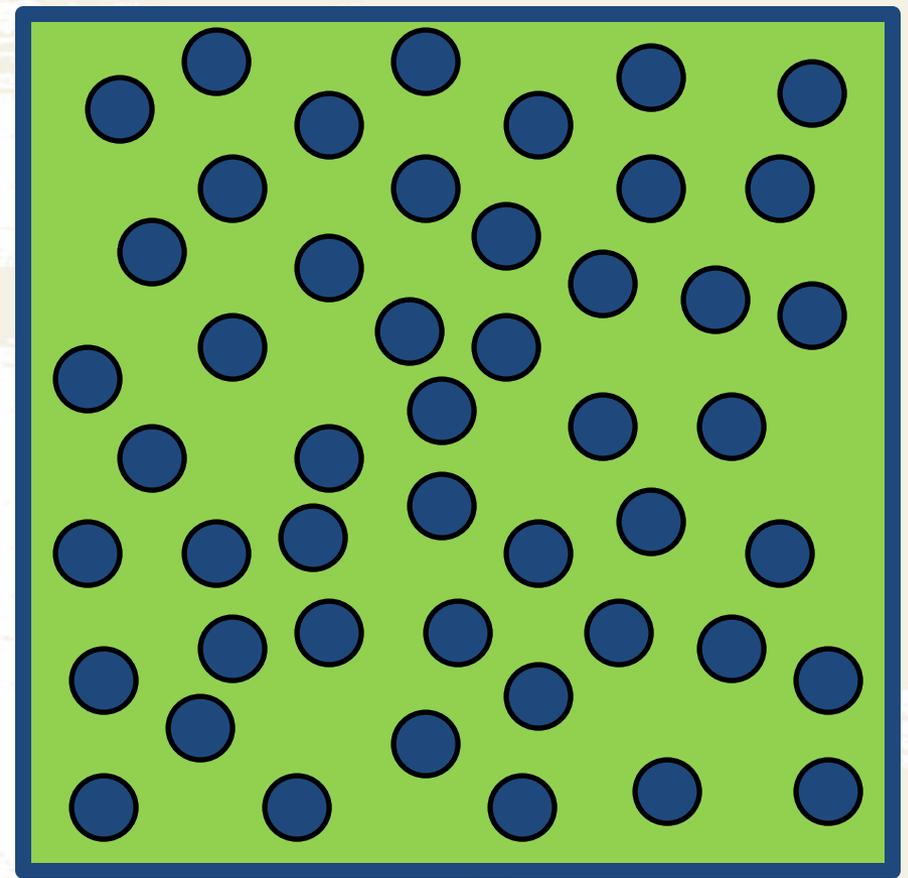




# What's Worse?



1 Cow X 100 Days



100 Cows X 1 Day

# Integrating Livestock: Breeding Stock



# Integrating Livestock: Feed



Complete self-sufficiency is to be aimed for as a matter of principle. For Demeter Biodynamic certification, a minimum of 50% of the feed ration (on a dry matter basis) must come from on-farm production.

## Appendix E: Allowable Imported Feedstuffs

(Note imported feedstuff must be certified organic at a minimum)

Ruminant diets:

- Basic staple feeds like hay, straw, silage, maize and beets
- grain, bran, Grain offal
- Pulses
- Hay made from foliage
- Herbs
- Molasses
- Grassland and arable products not mentioned elsewhere
- Fodder mixes containing the above mentioned ingredients
- Litter of fruits and vegetable
- By-products of processing (products of animals are excluded)

-Pigs :

In addition to a) above the following may be used:

- Skim milk powder without additives, and milk products
- Plant oils of natural origin(providing there is no concern about residue levels)
- Clean vegetable litter

-Poultry:

In addition to a) and b) above the following may be used:

- Milled dried herbage
- Paprika powder

**Appendix F: Allowable Feed Extenders and Additives**  
**( Note sources must be allowable in certified organic production at a minimum)**

- - Stock salt
- - Calcified seaweed, feed lime, lime from seashells
- - Seaweed
- - Mixtures of minerals and vitamin preparations (= Premix: no individual amino acids, preferably of natural origin)
- - Rock flour, Cod-liver oil, carob
- - Plant oil, bran, brewers yeast, molasses as a carrier in mineral concentrates or as an aid to reduce dust, or as an aid in pressing (max. 2% of the production ration)
- - For beekeeping: sugar (refer to Standards for Beekeeping and Hive Products for the use of Demeter, Biodynamic® and related Trademarks. for the allowable limits). Premixes must not contain any genetically modified substances, or be produced with the help of gene technology. Written proof to this effect must be supplied to the inspection body.

The following are allowed as aids in the silage making process:

- - Feed grade sugar
- - Grain meals from grain produced to these standards
- - Lactic acid promotion agents
- - Whey
- - Molasses, salt, wet and dry cuttings

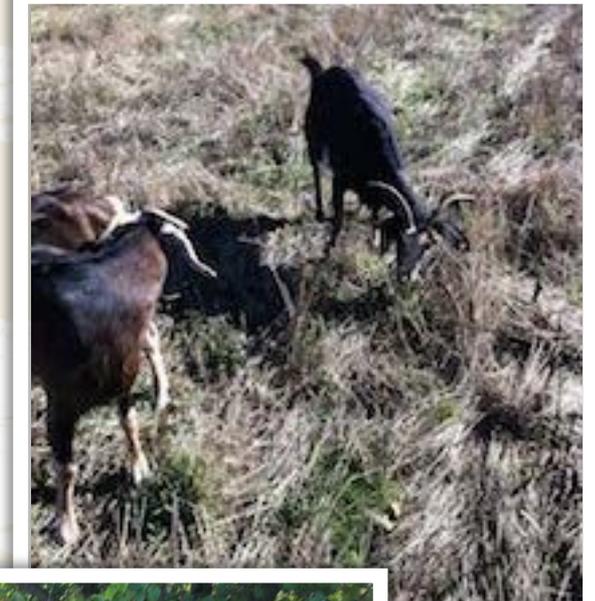
# Integration of Livestock Housing and Outside Access



The behavioral and species-specific characteristics of farm animals are given respectful consideration when determining their housing and general living conditions.

# Integration of Livestock Demeter Specifics

## Cattle, Sheep, Goats and Pigs



# Integration of Livestock Handling of Manure





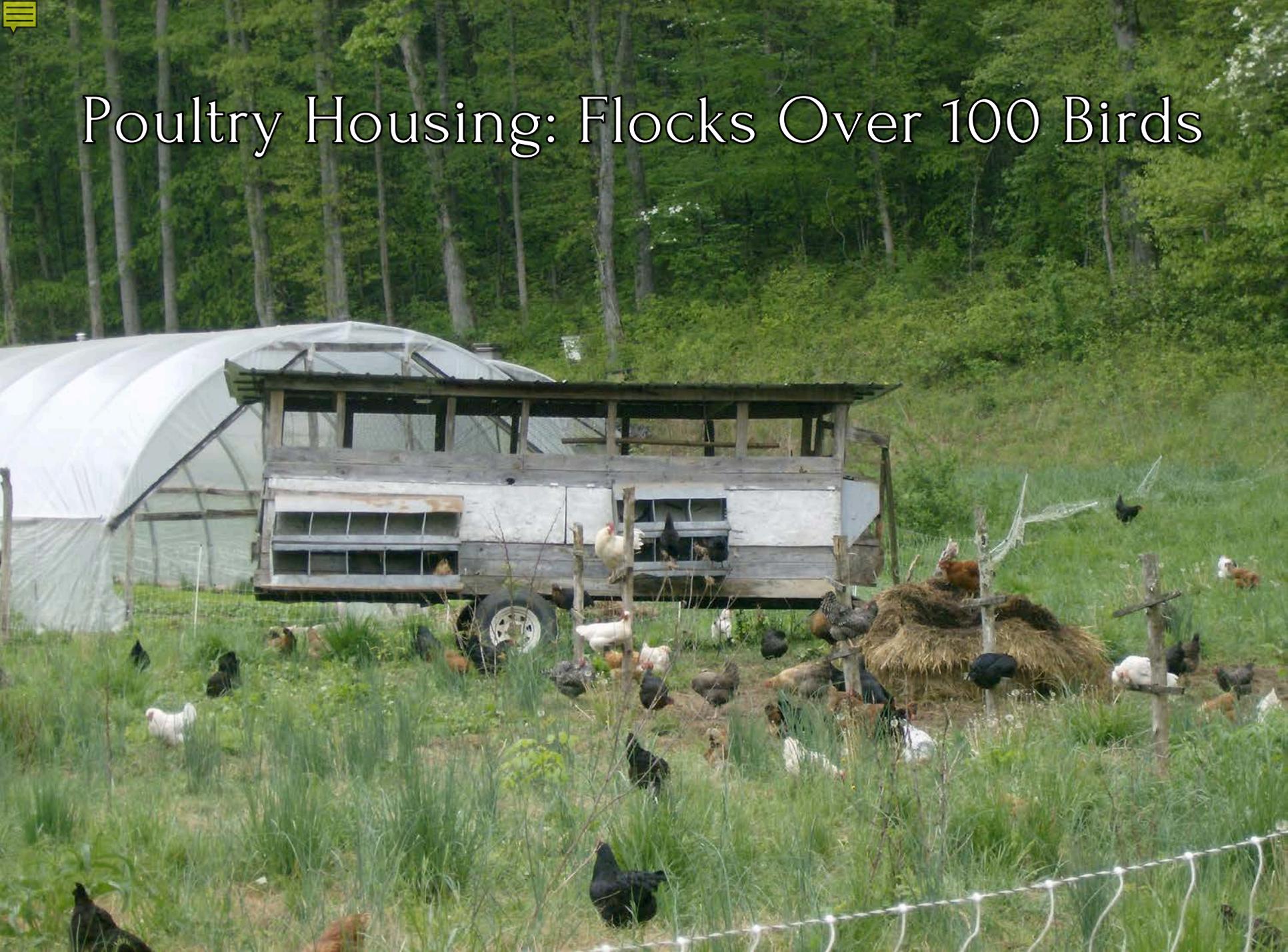
Poultry Feed



# Poultry: General Requirements



# Poultry Housing: Flocks Over 100 Birds



## Minimum age at slaughter for poultry

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<b>species</b>	<b>Minimum age (days)</b>
chickens	81
capons	150
Peking ducks	49
female Muscovy ducks	70
male Muscovy ducks	84
Mallard ducks	92
guineafowl	94
Turkeys and roasting geese	140

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# Veterinary Treatment of Animals

The NOP organic regulation applies as a base minimum.

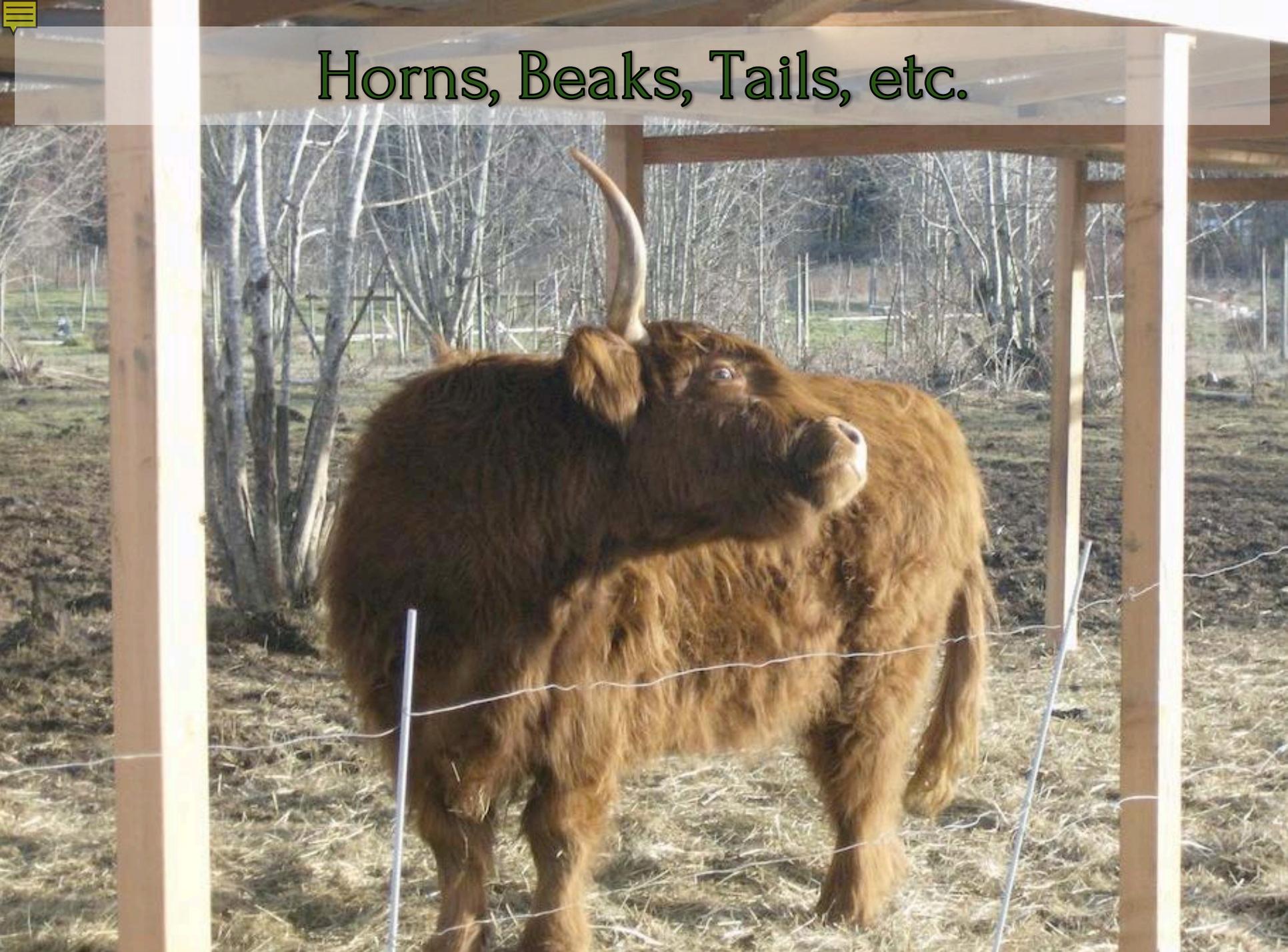
Herbal, homeopathic or Anthroposophical treatments are to be given preference. Routine and preventative treatment with allopathic medication is not allowed except in the case of vaccinations required by law. Legal withholding times are to be doubled in case of required vaccinations. It is strongly recommended to use homeopathic nosodes in place of vaccines whenever applicable.

## External parasites

Primary control of external parasites needs to be based on modifying the livestock living situation in a manner that inhibits the parasites' presence and reproduction i.e. sanitation, repelling agents, release of predators, etc. In extreme cases natural pyrethrum may be used in a dilute form in barns and loading areas. It may not be used directly on livestock. Concentrated natural pyrethrum may not be used.

*Note: With the exception of whole flower natural pyrethrum, only those extracted pyrethrum products with approved ingredients may be used.*

# Horns, Beaks, Tails, etc.



The cow has horns in order to send into itself the astral-etheral formative powers, penetrating the digestive organs and manure



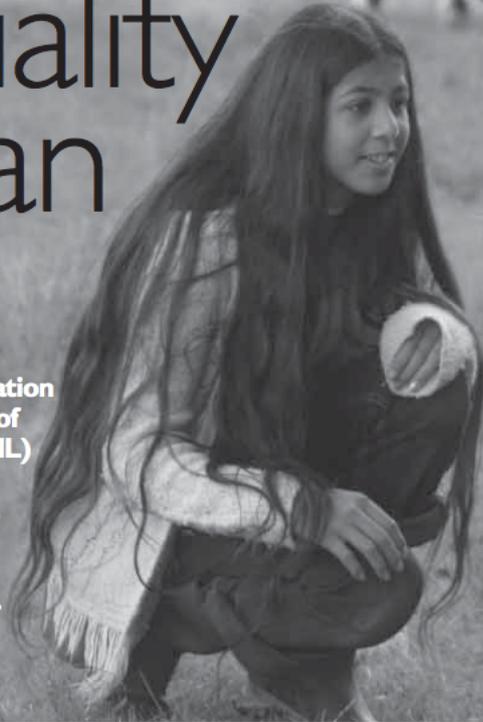
Livingsness, must be communicated to the soil.

Birds  
Horns  
Formative  
Magnetic  
Astral  
forces



# Milk Quality & Human Health

Report from Prof. Ton Baars in cooperation with Ruth Adriaanse, Machteld Huber of the Louis Bolk Institute, Driebergen (NL) and Jenifer Wohlers, co-worker of the Department of BD Agriculture, Kassel. The report is a translation of an article published in the German biodynamic magazine 'Lebendige Erde' No. 6, 2005. Ton Baars currently holds the chair of biodynamic agriculture at Kassel University, Germany.



## ABSTRACT:

**In Part 1 of the report Professor Baars outlines a need to consider the dynamic balance of the bovine nervous system with regard to influences of feed quality, animal husbandry and breeding management on cow health. Baars elaborates methods of assessing and measuring dynamic balance and explores the effect of human relationship upon animal health.**

**In Part 2 he discusses on-farm trials and recent research from a comparative study of biodynamic, organic and conventional dairy farms undertaken by the Louis Bolk Institute, Netherlands. Methods of quality research and their respective outcomes are explained and discussed.**

and influences the entire physiology of the organism. In so doing it uses the sympathetic and para-sympathetic nerve systems. In the rhythm of the heart beat we experience the living or dynamic balance of these two systems. Working in synchronicity, the sympathetic system governs increased heart rate associated with stress and escape while the parasympathetic works to calm and reduce heart rate. The dynamic balance between these two systems is the reason why the pause between two heart beats is never the same. We should really speak of heart rhythm rather than heart beat.

All this becomes very relevant in a practical context for animal health is a matter of dynamic balance. Therefore any prolonged stress will finally result in imbalance or loss of centre. Daily rhythm and the rhythms associated with the week and even with the years have an influence on this pattern of balance and imbalance. Not all imbalances are