

ANIMAL WELFARE ON ORGANIC FARMS FACT SHEET SERIES
CONTROL OF LICE AND MANGE MITES IN CATTLE

Produced in consultation with the ECOA Animal Welfare Task Force, July 2009

INTRODUCTION

In a well managed organic herd where animals have freedom of movement, good nutrition and strong immune systems, the presence of lice and mites may have little impact. However, when conditions favour these external parasites, the activity of lice and mange mites can cause irritation and lower milk production levels, reduce appetite and feed conversion, cause blood loss, damage the hide, and cause stress; young animals in particular can be more adversely affected. Organic producers cannot resort to insecticides for control and therefore other management strategies are required. These will involve an integrated pest management approach which includes prevention, identification of the pest and understanding its life cycle, monitoring the population, and the use of acceptable control methods.

IDENTIFICATION AND MONITORING

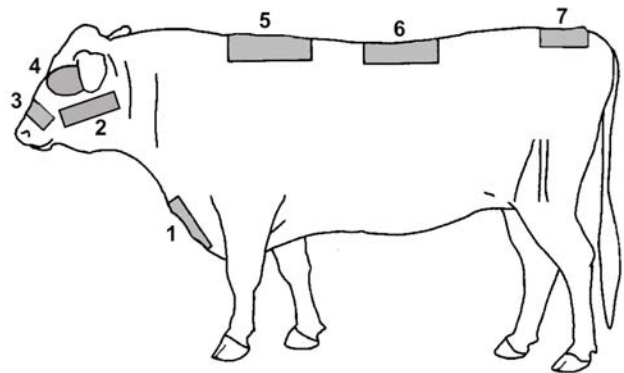
LICE are small and inconspicuous. There are two main types: chewing lice rasp at the skin and hair; sucking lice penetrate the skin and suck on blood. The eggs (nits), often creamy white and about 1.5mm in size, are attached to the hairs. Development varies with temperature and species but generally they hatch in 7-14 days and the life cycle is completed in 3-4 weeks.

Clinical signs: rough hair or coat, licked hair, lack of appetite and poor rate of gain, lethargy, pale (anemic), constant rubbing against fence or equipment which leads to the hair loss.

Occurrence: More common during the winter months with peak populations found in February/March. Dairy cattle in tie stall barns are twice as likely to be infected as those in free stalls. Calves that are housed indoors can be affected throughout the year with peaks in the summer months. Lice are spread in a herd by direct contact and tend to congregate at specific sites on the animals. Heavy infestations are more

likely when there is an underlying management problem.

Determining presence: Inspect the key sites and count the lice seen. Part hair with comb or back side of pocket knife and examine skin along length of the part. Make 4-5 partings, 3-4 inches long at each examination site: 1) dewlap (or brisket), 2) cheek, 3) muzzle, 4) eye, 5) withers, 6) topline, 7) tailhead.



The combined number at all sites gives an indication of severity of the infestation: <10 minimal; 10-50 moderate; 51 or more heavy. (Source: Evaluating louse infestations in cattle, Dr. Douglas Colwell, AAFC, Lethbridge, Alberta.)

MANGE MITES (*Chorioptes bovis*) feed on lymph as well as dead cells and other debris resulting in 'barn itch' with hair loss and scabiness. The skin under the infected area becomes swollen and inflamed. Mites develop in 2 weeks with populations increasing in fall and winter with heaviest infestations in late winter and early spring. Another species *Sarcoptes scabiei* burrows into the skin. Lesions form as an immune response to the burrowing activity but some animals appear to be resistant and do not react. Mange lesions appear first around the tail, anus, thighs, udder, legs and feet. Microscopic examination of skin scrapings is used to confirm mites; as will a blood test. Mites can also be detected as "mobile dandruff" using a hand lens

(x10 magnification). Infection is spread by direct contact between cattle or when straw bedding and other objects become contaminated with burrowing mites.

PREVENTION

- Exposure to sunlight - keep animals outdoors as much as possible.
- Avoid close confinement.
- Good quality feed - provide free choice mineral and kelp to young stock in winter.
- Reduce stress - maintain a stress free environment which allows expression of natural behaviours. Ensure ample space.
- Quarantine - check replacement animals brought into the herd. Isolate from the rest of the herd and observe for 3 weeks.
- Maintain a closed herd policy.
- Minimize communal grazing with other herds.
- Provide a cattle back scratcher (without an insecticide reservoir) to help control chewing lice populations.
- Select for resistance and cull animals that are chronic sufferers.

CONTROL METHODS

When normal behaviour is disrupted by a heavy infection, control measures acceptable for organic production are needed. Always check status before use. Research reports on non-chemical control methods are lacking. There are examples in the literature from India based on the traditional use of medicinal plants, most of which are not found in Canada. Information presented below is from books on natural veterinary care, and reports from organic farmers based on their experience.

- Apply a thin coat of vegetable oil such as raw linseed oil to suffocate insects. ⁽²⁾ Kerosene, diesel or other petroleum based products are not acceptable.
- Apply undiluted soap solution, repeat after one week to control any newly hatched lice. ^(2,3)
- Scrub with iodine, repeat after one week.
- Diatomaceous earth – the sharp points pierce the insect's exoskeleton ^(1,2). Farmers claim success using it 50/50 with sulphur. ⁽⁵⁾
- Garlic powder for topical treatment and feed as a tincture. For small spots of mange saturate area with garlic tincture and rub in. ^(1,2,3)

- Apply essential oils -1 part with 2-3 parts vegetable oil rubbed in well; e.g. anise, camphor, eucalyptus, pennyroyal, pine rosemary and sassafras. ⁽¹⁾
- Homeopathic remedies for mange such as FARM500 (arsenicum album, graphites, hepar sulph, kali arsenicum, psorinum, sulphur) from Woodland Natural Remedies, Ontario.
- Pyrethrum botanical insecticide without Piperinyl butoxide ⁽²⁾ (e.g. PyGanic when it is registered for use in Canada)
- Feed kelp at 1 once per head per day for young stock. ⁽³⁾
- Rub 2 or 3 handfuls of sulphur along spine; maintain adequate levels in the diet. ⁽⁶⁾
- Lime-sulphur dip for mange - 6 treatments one every 7-10 days. ⁽⁷⁾
- If above methods fail and animals are suffering, use a parasiticide for emergency control – slaughter animals may lose organic status.

Disclaimer: Trademark names are given as examples only and do not imply endorsement.

SOURCES OF INFORMATION

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 2. Controlling external parasites on the organic farm. Organic Valley Coop, Joe Pedretti, Forum Editor. http://www.organicvalley.coop/pdf/pools/controlling_parasites.pdf
 3. Paul Dettloff, D.V.M., Alternative Treatments for ruminant Animals, Acres USA 2004
 4. Dr. Hubert Karreman – Treating Dairy Cows Naturally; & Jan 2002 Newsletter Penn Dutch Cow Care
 5. ODairy Listserve
 6. Pat Coleby, Natural Cattle Care, 2001
 7. Merck Veterinary Manual
- See also: <http://www.organic-vet.reading.ac.uk/Cattleweb/disease/Lice/lice1.htm>;
<http://www.organic-vet.reading.ac.uk/Cattleweb/disease/Mange/man1.htm>

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