

Genus : Moniezia

Instructor:

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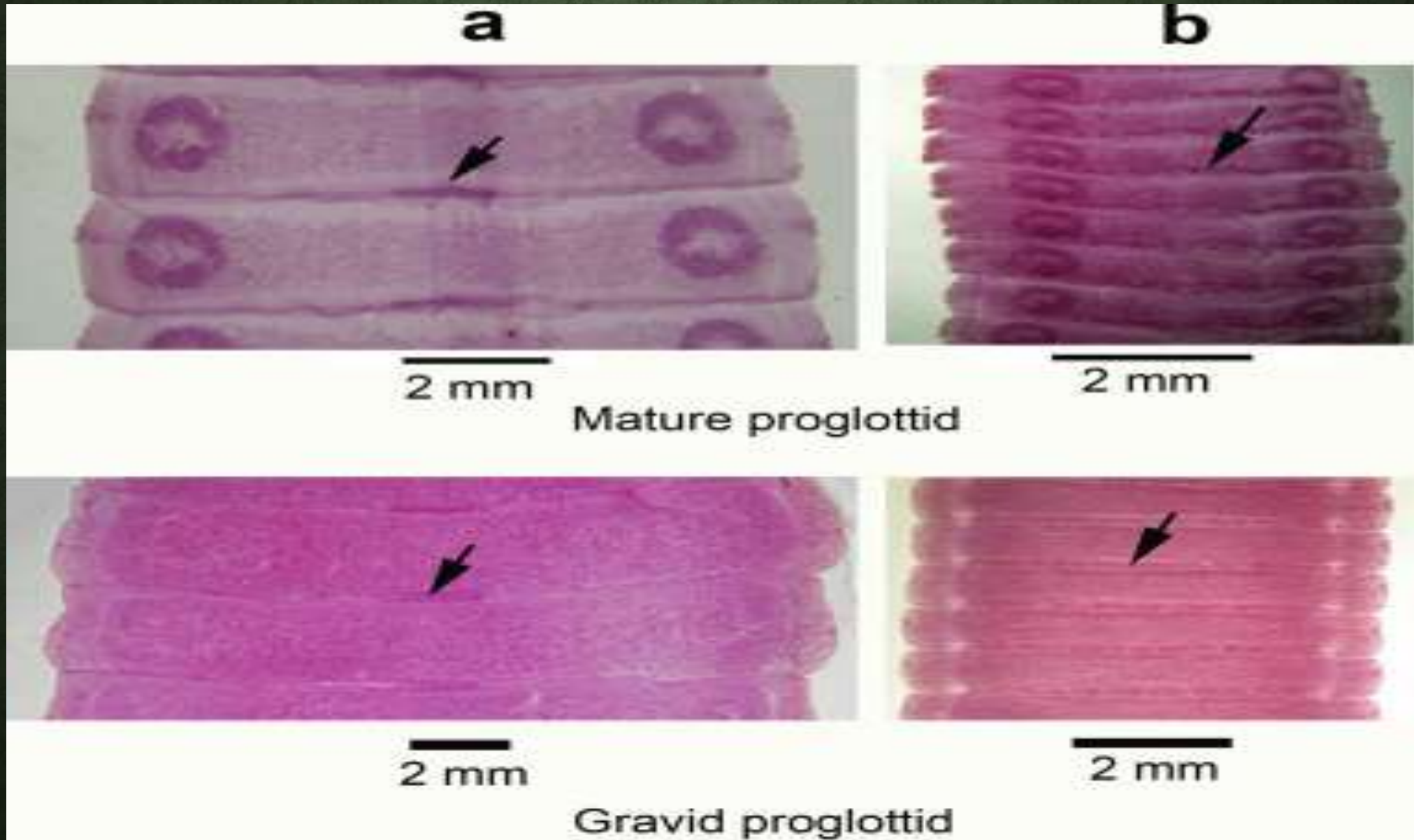
Veterinary Parasitology

Bihar Veterinary College, Patna.

Moniezia : Morphology

- ❑ The flukes are flat with multiple segments of proglottids.
- ❑ The adult bodies lack digestive tracts and are covered in microvilli to increase surface area for the absorption of nutrients.
- ❑ *Moniezia expansa* adults can reach lengths of 4 to 5 meters.
- ❑ Three sections including the scolex, neck and strobila.
- ❑ The scolex is usually contains suckers and hooks to assist in holding on to the host.
- ❑ The small neck produces immature proglottids, while the large strobila (main body) consists of a large chain of mature male and female proglottids.
- ❑ The size of *M. expansa* larvae vary throughout its life cycle, containing hooks to dispel the egg.
- ❑ *Moniezia expansa* can be distinguished from a similar species, *Moniezia benedeni*, through the patterns of interproglottidal glands. In *M. expansa* these glands form a rosette pattern around depressions into the posterior surface while *M. benedeni* glands are linear.



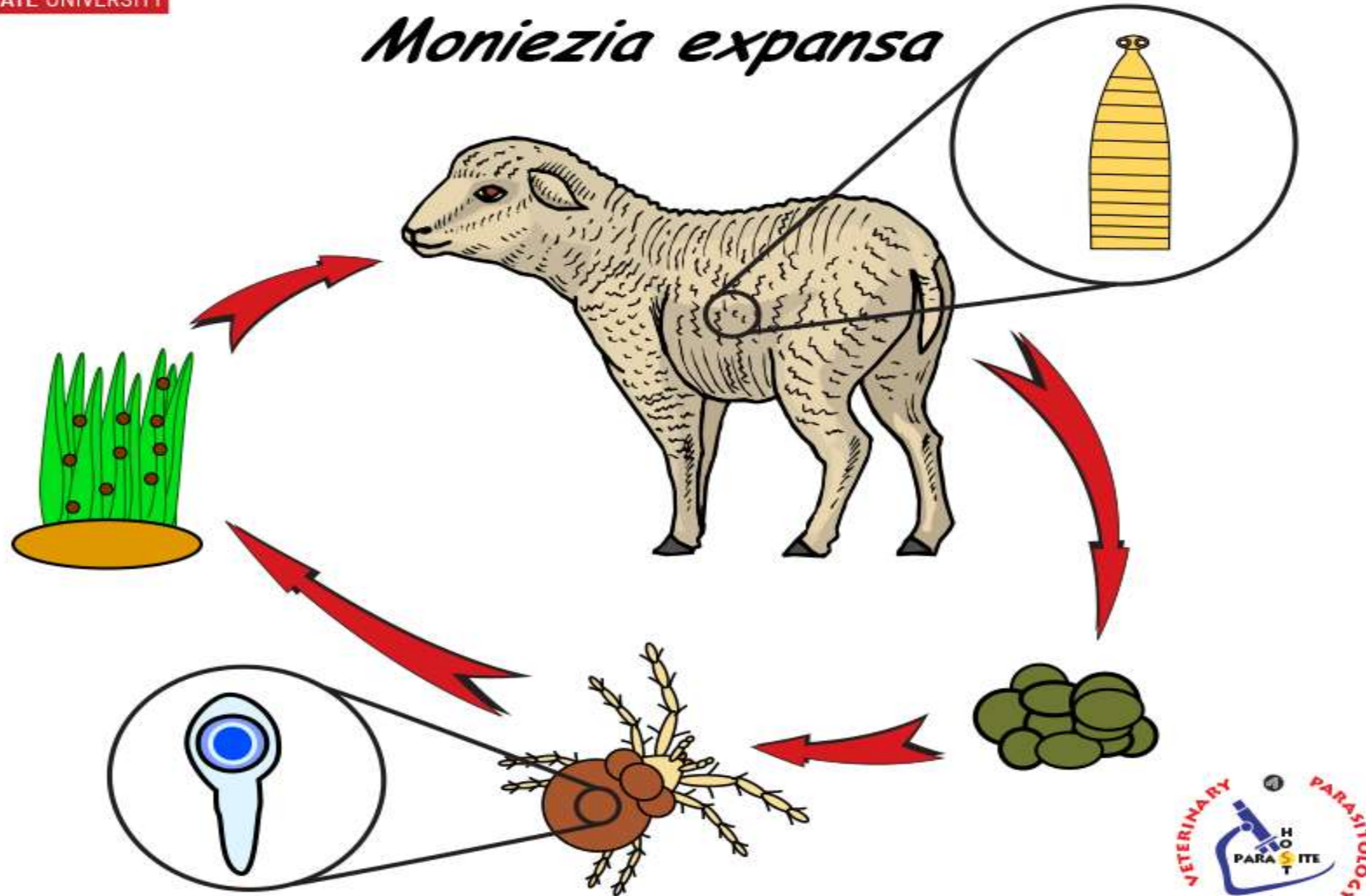


Moniezia expansa

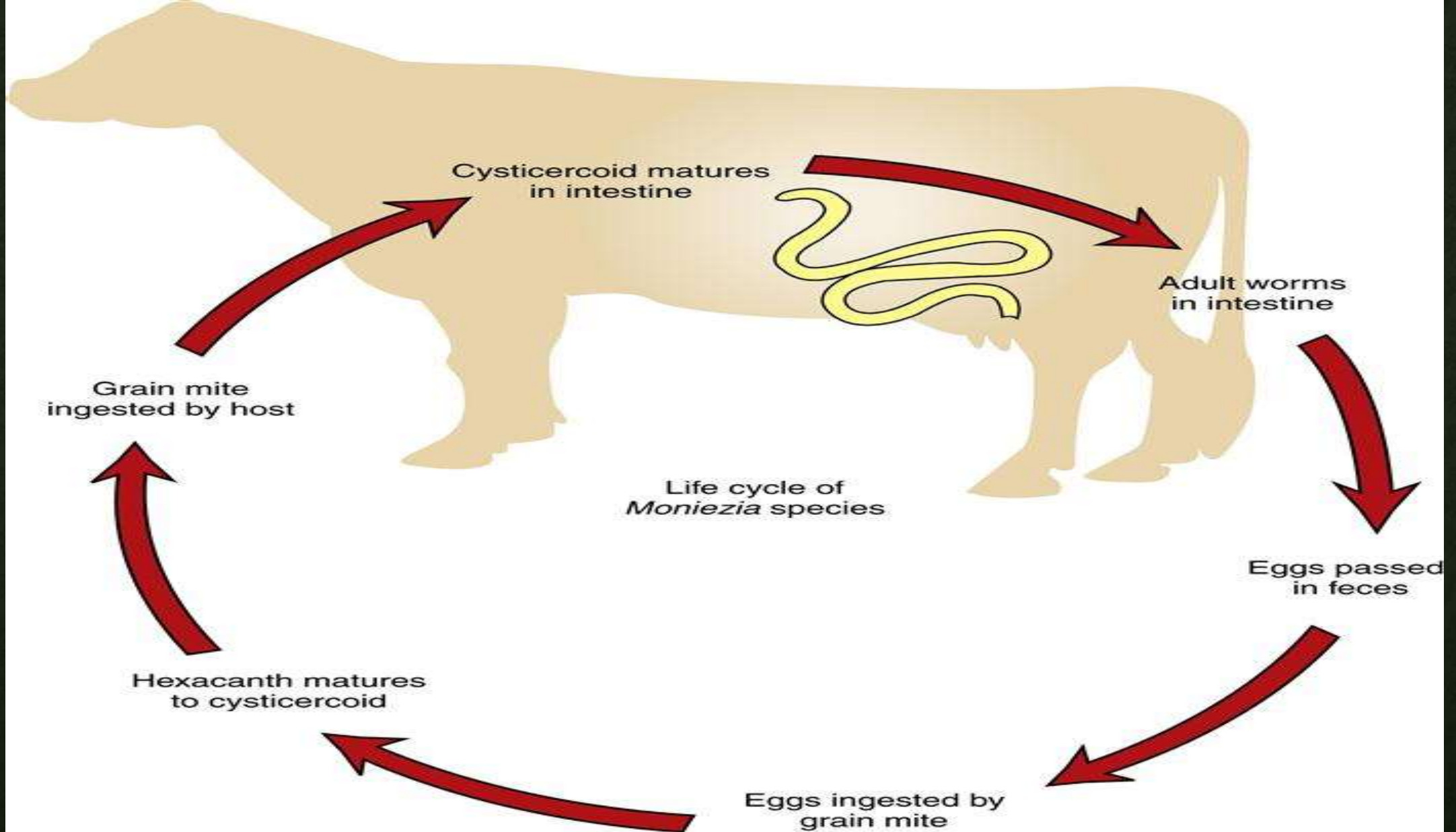
Moniezia : Life cycle

- ❑ The complete life cycle requires two hosts, ruminants as definitive hosts, and oribatid mites as intermediate hosts.
- ❑ The eggs are passed out from the intestine of the ruminant host along the gravid proglottids in the feces into the soil.
- ❑ These eggs are eaten by soil mites, then eggs must reach the gut of mite hosts within 1 day .
- ❑ Chances of development is very good as soil mites can be so numerous on a pasture.
- ❑ A grazing ruminant may ingest over 2,000 cysticercoids per kilogram of grass. Once inside the intestine of mites, the eggs hatch and the oncospheres penetrate into the haemocoel and develops to the cysticercoid stage. This stage may take up to 4 months.
- ❑ When the infected mite is eaten by the grazing ruminants, mature cysticercoids are digested out of the mite, and develop into mature tapeworms in the small intestine within 5–6 weeks.

Moniezia expansa



Moniezia expansa : life cycle



Moniezia : Pathogenesis

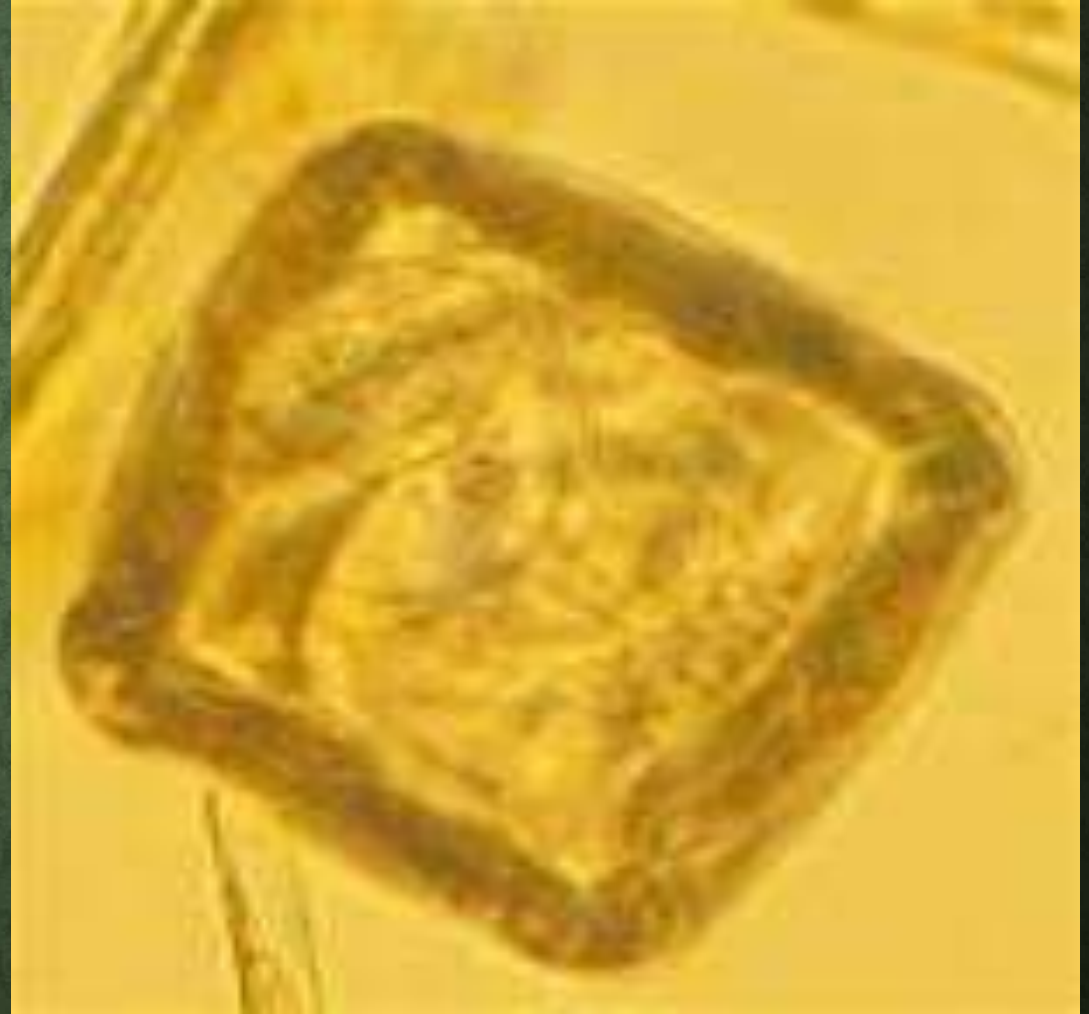
- ❑ *M. expansa* infections are generally harmless and asymptomatic, even when the tapeworms are present in large numbers in young lambs.
- ❑ Heavy infection may cause intestinal obstruction, diarrhea and weight loss
- ❑ Lambs are more susceptible and massive infections can cause diarrhea, reduced weight gain and intestinal obstruction.
- ❑ Goats and cattle are rarely infected with tape worms but mainly with gastrointestinal roundworms.

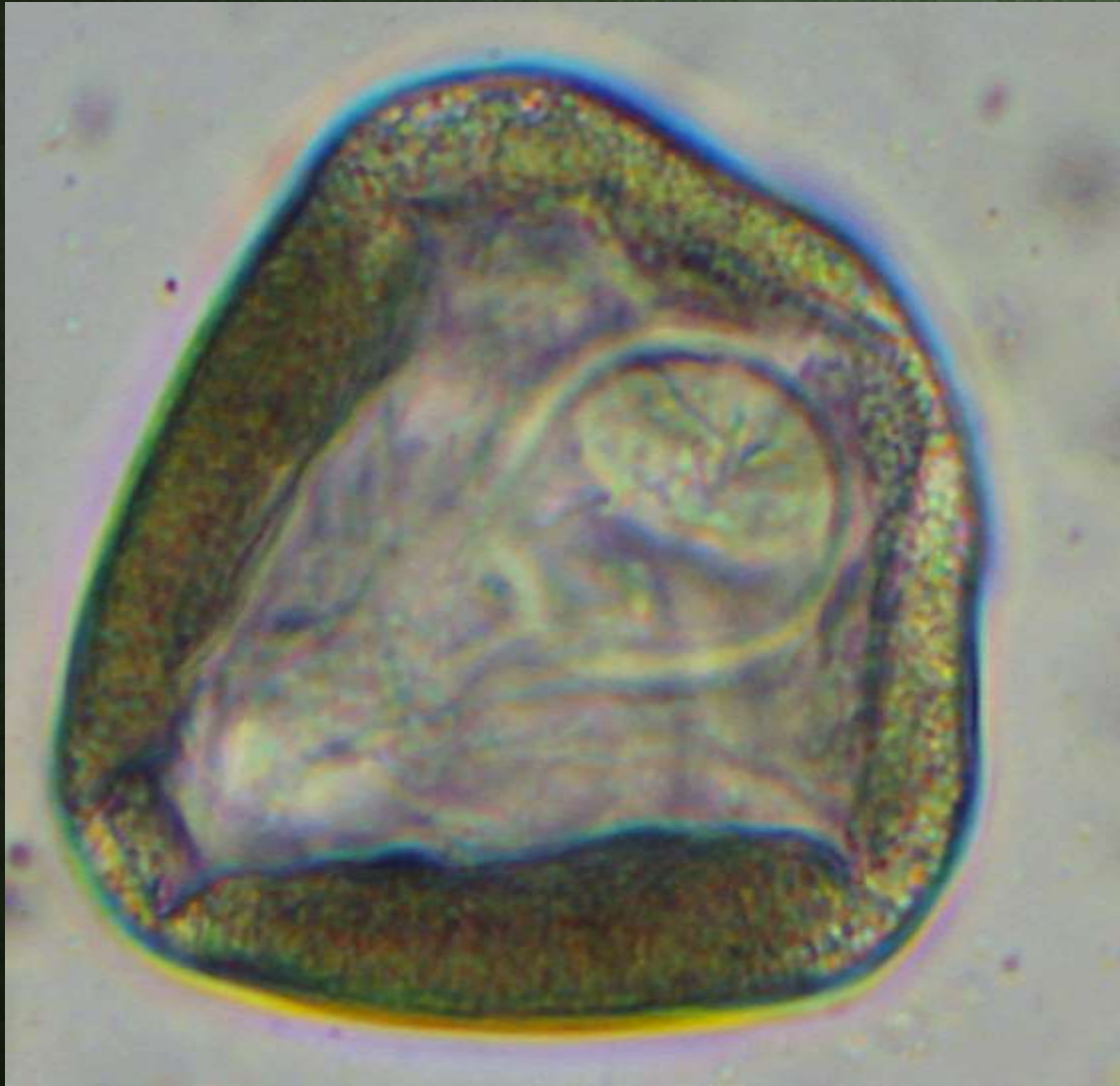


Moniezia expansa : lesion

Moniezia : Diagnosis

- ❑ Examination of faecal sample for detection of eggs .
- ❑ Observation of the gravid proglottids in feces and anus.





Moniezia : Prevention and control

- ❑ It is not possible to eliminate the oribatid mites in the pastures.
- ❑ The use of insecticides is more expensive than the potential economic loss due to the infections, and also detrimental effect on the environment. So for this purpose it is not advisable.
- ❑ Since the mites prefer humid pastures and avoid light as well as dryness, they are more active early in the morning, so this time grazing should be avoided.
- ❑ Susceptible livestock can be treated with broad-spectrum anthelmintics e.g. albendazole, fenbendazole, mebendazole, oxfendazole, etc. or specific taenicides e.g., niclosamide, praziquantel, etc. Specific taenicides are also used in mixtures with nematocides e.g. ivermectin, levamisole, etc.