

# *Dictyocaulus viviparus*

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## cattle lungworm

**Description:** Internal parasite. Adults are up to 8 cm long, thin, and milky white. Females are longer than males.

**Life Cycle:** Adults living in the airways lay eggs containing larvae. As respiratory secretions carry these toward the mouth, they are coughed up and swallowed. Hatching occurs in the intestine. First-stage larvae are passed in feces and molt twice on pasture before becoming infective third-stage larvae, about 7 days after leaving the host. *Dictyocaulus* larvae are less mobile than those of other parasites. This characteristic, in some cases, prevents ingestion by cattle that do not graze in areas contaminated by feces. However, lungworm larvae frequently live on the *Pilobolus* fungus, common in cattle feces. When the ripe sporangium of *Pilobolus* explodes to release spores, the larvae living on the fungus are deposited on pasture as far as 10 feet from the fecal pat, improving the chances that larvae will be ingested by grazing cattle. When swallowed, the larvae penetrate the bowel and are carried to local lymph nodes, where they molt to become fourth-stage larvae. They then travel via the thoracic duct to the jugular vein to the right side of the heart, which pumps them to the lungs. Here they complete their final molt some 14 days after ingestion. Sexually mature adults can be identified 8 days later. Larval stages can remain inhibited in the lungs for up to 150 days. However, the time between infection of the cattle and the earliest time at which this parasite's eggs can be recovered in feces is about 29 days.

**Geographic Distribution:** Worldwide; most important in temperate areas in which intensive management conditions prevail.

**Significance:** Severe *D. viviparus* infections can lead to complications that can cause a mortality rate of 20% or more among affected animals. Larval lungworms irritate the bronchioles before eggs can be seen in nasal secretions or larvae appear in feces. Later, the adult worms irritate the trachea and bronchi. In both stages, increased respiratory secretion causes lung congestion. The disease caused by lungworm is parasitic bronchitis, also called husk or hoose, which is characterized by rapid shallow breathing and coughing. Severe cases lead to emphysema and pneumonia – heavy infections can cause death.