

Developmental Rate of the Sheep Stomach Worm, *Haemonchus contortus*

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Eggs in the morula stage were secured from adult parasites acquired from Armour and Co., Chicago, Illinois. Individual batches of these were placed in tap water and a feces-decoction filtrate and incubated at several temperatures between the established minimum and maximum until attainment of the third-stage or infective larvae. Velocity curves of development were made according to the method of Shelford (1927, Ill. Nat. Hist. Survey Bull. 16:311-440).

The number of developmental units required to complete development from the morula to the third-stage or infective larva are 1019 and 1081, respectively, in covered containers of tap water and feces-decoction filtrate. These developmental units are 706 and 1074, respectively, for development in uncovered containers of tap water and feces-decoction filtrate.

At optimum temperature (33.3°C), *H. contortus* ova and larvae complete development to the third-stage larvae in uncovered containers in 60 hours in tap water or feces-decoction filtrate and in 65 hours in covered containers of each of these media.

Minimum lethal temperature for ova of *H. contortus* is 5.56°C, Approximately 5% of the ova hatch at 8.89° C with prolonged incubation. The minimum temperature at which third-stage larvae were produced was 14.4°C in feces-decoction filtrate, but only 1% reached this stage in 251 hours in covered and uncovered containers. The minimum temperature for 100% development to the third-stage larva was 17.8°C in feces-decoction filtrate and 21.1° C in tap water in 201.5 hours and 156 hours, respectively.

The maximum temperature which permitted development to the third-stage larva was 36.7°C, but only 10% of the ova developed to this stage. This development occurred in covered dishes of tap water and required 132 hours. At 35.6°C all "cultures" developed 100% infective larvae in 70-80 hours.

A temperature of 37.8°C proved lethal in 5 days.

Exposure of ova at 4°C proved lethal in 82 hours. Removals from 4°C to optimum temperature (33.3°C) after exposures of 11, 34 and 59 hours showed a progressive retardation of development of infective larvae.

Ova incubated at 33.3°C and removed to 4°C at periods of 11 and 34 hours showed no further development. Ova exposed for 59 hours before removal to this temperature developed to third-stage larvae, proving that once a critical stage (advanced second-stage larva) in development is reached, development and survival of infective larvae are not inhibited by a temperature of 4°C.