



Title	NUMERICAL ANALYSIS ON THE WAVY TRACK OF NEMATODES
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Citation	Japanese Journal of Veterinary Research, 22(1-2), 49-49
Issue Date	1974-04
Doc URL	<a href="https://hdl.handle.net/2115/2042">https://hdl.handle.net/2115/2042</a>
Type	departmental bulletin paper
File Information	KJ00002371149.pdf



## INFORMATION

Hokkaido University granted the degree of Doctor of Veterinary Medicine to the following 2 researchers on 25 December, 1973 under a new regulation (1962) authorizing the granting of the Graduate School of Veterinary Medicine.

The titles of their theses and other informations are as follows:

### NUMERICAL ANALYSIS ON THE WAVY TRACK OF NEMATODES

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Analyses of the bending waves in the locomotive tracks left by nematodes on the surface of a 1% agar plate coated with drafting ink were attempted by the help of many photomicrographs. A functional formula suitable for these tracks was investigated. The results obtained are summarized as follows:

Waves of tracks are classified 4 principal types, A (resemble sine curve), A' (flatter than A), B (U-shaped) and C (horseshoe-shaped). The gap between the sine curve and the track wave increases from A' to A, B and C-types respectively.

Using the curvature  $\left(\frac{1}{\rho}\right)$  and the arc-length ( $s$ ) of the track, the track wave is transformed into a normalized curve, which follows the sine curve and is expressed by the equation  $\frac{1}{\rho} = \bar{A} \sin \frac{2\pi}{M} s$  ( $\bar{A}$  is the amplitude and  $M$  is the track length in a wave-length).

Using the  $s$  and  $\theta$  (angle by which the row deviates from the mean track direction), the above mentioned equation is integrated and the equation of sine-generated curve (SGC),  $\theta = \omega \cos \frac{2\pi}{M} s$  ( $\omega$  is the maximum angle the curve makes from the  $x$ -axis) is obtained. Therefore, the SGC fits for all 4 principal track waves.

Parameter  $\omega$  and  $M$  have a mutual relation and acquire regression lines, the  $\omega$  and  $M$  of the track are not influenced by various body-lengths of the same species and under a thermal gradient, but with a lapses of time and under a hige agar concentration, the value of  $M$  decreases. And the velocity of the nematode decreases when the value of  $M$  decreases and the value of  $\omega$  increases.