Diversity of Intestinal Helminths in Domestic Chickens (*Gallus gallus*) from San Pu Loei Market, Hang Dong District, Chiang Mai Province

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Abstract

Domestic chickens (Gallus gallus) are widely consumed in northern Thailand. Due to free-range raising practices and natural foraging activity, these chickens are often exposed to environmental parasites, particularly intestinal helminths This study aimed to investigate the prevalence, intensity, and helminth species in domestic chickens from San Pu Loei Market, Hang Dong District, Chiang Mai Province. A total of 36 gastrointestinal tracts were examined between July and November 2025. Helminths were collected and identified based on morphological characteristics. The result revealed that the overall prevalence of helminth infection was 86.11%. Eight helminth species were identified, comprising six cestodes and two nematodes. The prevalence (%) and mean intensity of each species were as follows: *Raillietina tetragona* (41.67%, 8.87), *R. echinibothrida* (38.89%, 9.43), *R.kashiwarensis* (27.78%, 5), *R. cesticillus* (2.78%, 11), *Amoebotaenia spinosa* (19.44%, 28.29), *Cotugnia* sp. (8.33%, 2), *Heterakis gallinarum* (63.89%, 52.96) and *Ascaridia galli* (38.89%, 10.21). Mixed infections were commonly observed, with 32% of the infected chickens hosting three helminth species concurrently. These findings offer revised baseline data regarding the diversity and distribution of intestinal helminths in domestic hens, which are crucial for enhancing poultry health management and reducing food safety issues in the Chiang Mai region.

Introduction

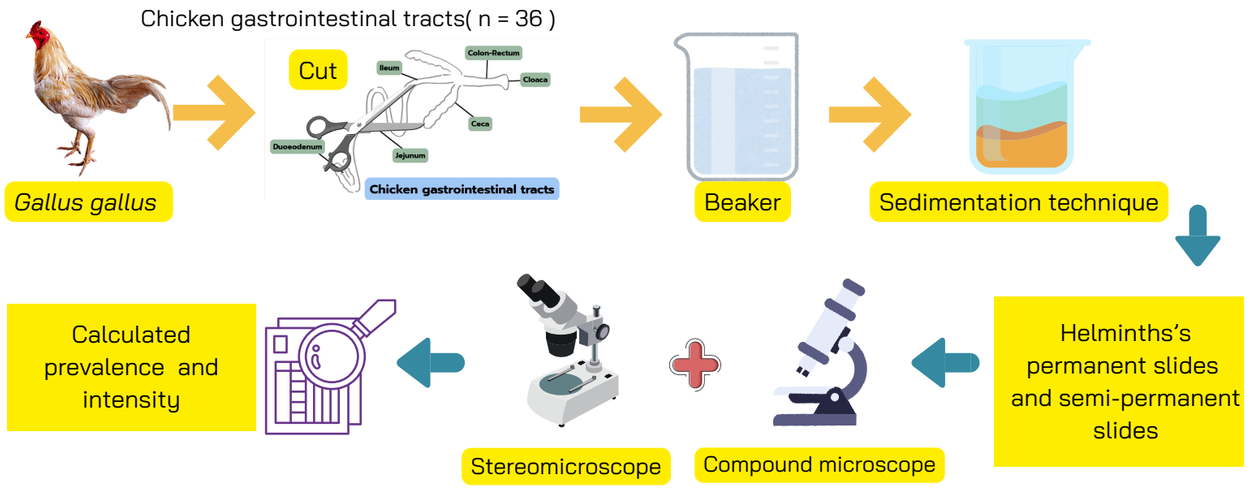
Domestic chickens (*Gallus gallus*) are important economic animals for local communities in Northern Thailand due to their low production cost and adaptability to local environments. They are commonly raised under backyard free-range systems, allowing them to forage naturally for insects and seeds. However, poor sanitation and management in these systems increase the risk of gastrointestinal helminth infections. Chickens can become infected either by ingesting parasite eggs from contaminated food, water, or soil, or through intermediate hosts such as insects and earthworms. Previous studies in Chiang Mai reported a high prevalence of helminth infections in backyard chickens.

Objectives

1 .To determine the prevalence and intensity of gastrointestinal helminth infections in domestic chickens in Hang Dong District, Chiang Mai Province

2 .To identify discovered gastrointestinal helminths based on morphological characteristics using light microscope

Material & Methods



Conclusions

This study investigated helminth infections in 36 native chickens (*Gallus gallus*) obtained from San Pu Loei Market, Hang Dong District, Chiang Mai Province. A total of eight helminth species were identified, comprising six cestodes and two nematodes.The highest prevalence and mean intensity were both observed in *Heterakis gallinarum*.

Mixed infections were common among the 31 infected chickens, with three-species infections most frequent (32%), followed by four species (23%). Single and double infections each accounted for 19%, while five-species infections were least common (7%). These results support improved helminth control and management of domestic chickens in Hang Dong District.

Acknowledge

The authors would like to thank the Department of Biology, Faculty of Science, Chiang Mai University, for laboratory facilities and support. The authors also sincerely thank their advisor, Asst. Prof. Dr. Preeyaporn Butboonchoo, for valuable guidance throughout this study.

References

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2. Wongsawad, C., Rojanapoon, A., and Suwannakudt, S. 1994. The Effects of Helminths in domestic chickens (*Gallus gallus domesticus*) in Chiang Mai. Research Report, Chiang Mai University, Chiang Mai, Thailand.

Results

Cestodes

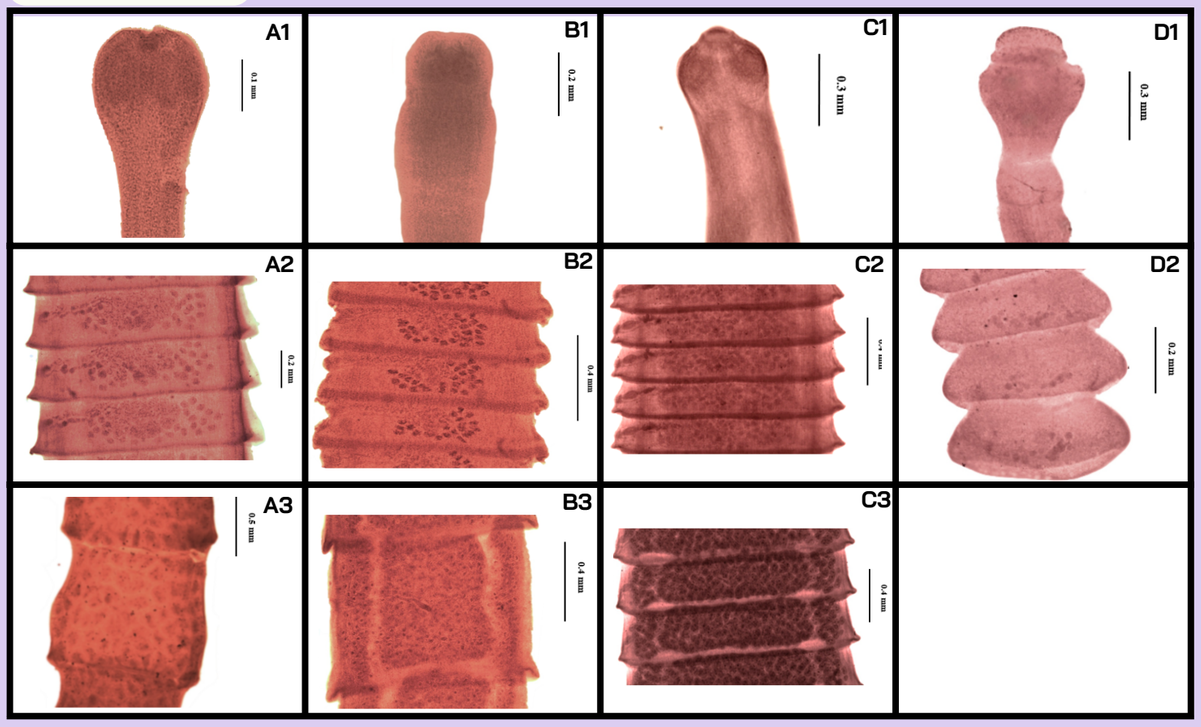


Figure 1 : Morphology of *Raillietina* Left–right: *R. tetragona* (A1-A3), *R. kashiwarensis* (B1-B3), *R. echinobothrida* (C1-C3) and *R. cesticillus* (D1-D2); top–bottom: scolex, mature proglottids, and gravid proglottids

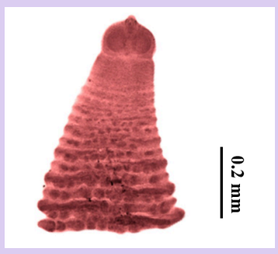


Figure 2: Morphology of *Amoebotaenia spinosa*

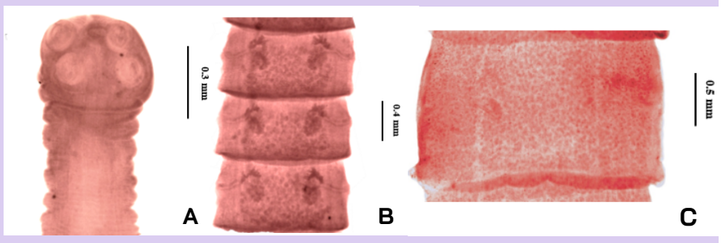


Figure 3 : Morphology of *Cotugnia* sp. ; A : scolex, B : mature proglottids, C : gravid proglottids.

Nematodes

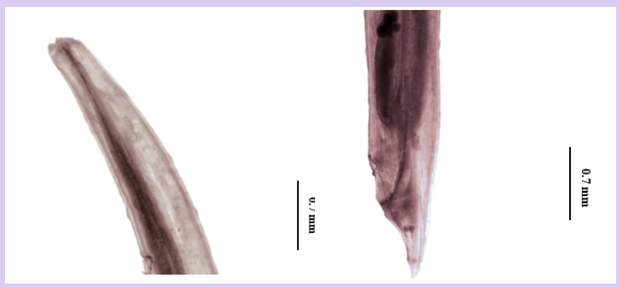


Figure 4: Morphology of *Ascaridia galli* (male)

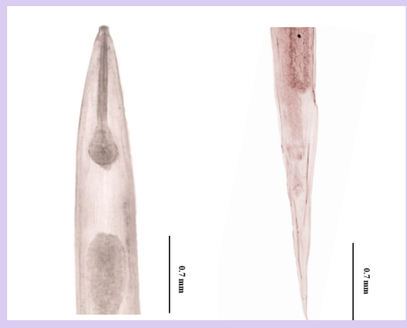
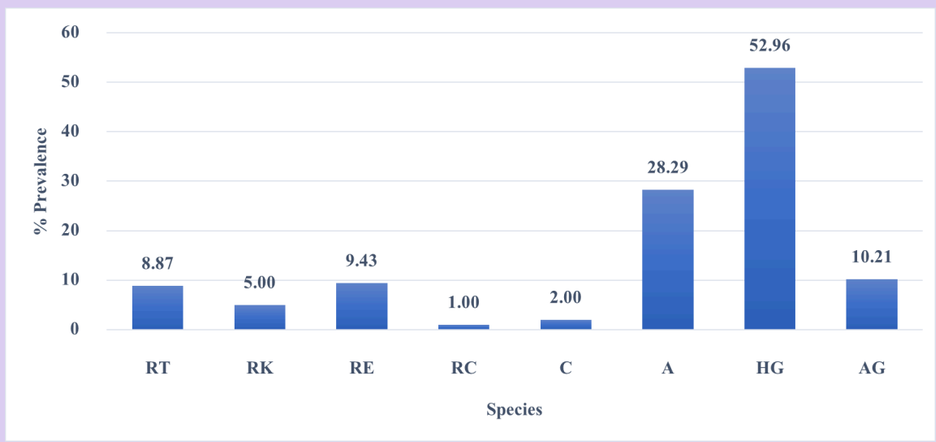
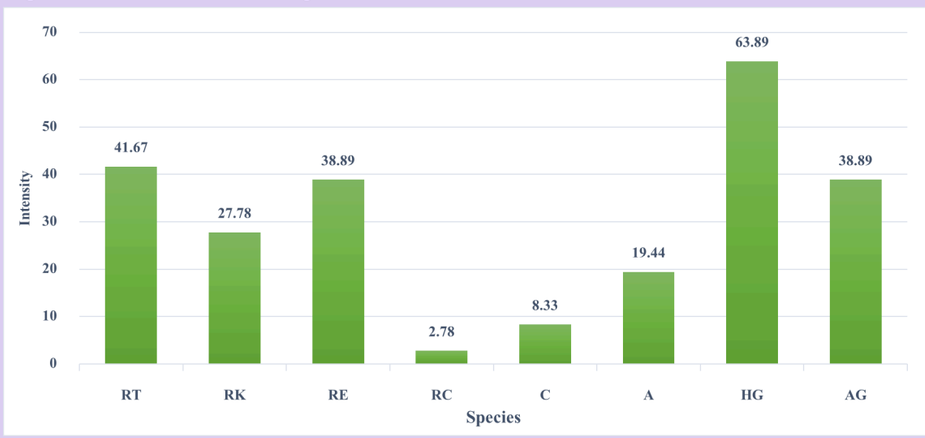


Figure 5: Morphology of *Heterakis gallinarum* (female)



- *Raillietina tetragona* (RT)
- *R. kashiwarensis* (RK)
- *R. echinibothrida* (RE)
- *R. cetticilus* (RC)
- *Cotugnia* sp. (C)
- *Amoebotaenia spinosa* (A)
- *Heterakis gallinarum* (HG)
- *Ascaridia galli* (AG)

Figure 6: Prevalence of each gastrointestinal helminth



- *Raillietina tetragona* (RT)
- *R. kashiwarensis* (RK)
- *R. echinibothrida* (RE)
- *R. cetticilus* (RC)
- *Cotugnia* sp. (C)
- *Amoebotaenia spinosa* (A)
- *Heterakis gallinarum* (HG)
- *Ascaridia galli* (AG)

Figure 7: Intensity of each gastrointestinal helminth