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Research Article

SNAIL SPECIES COMPOSITION AND TREMATODE LARVAE IN SNAILS FROM SMALL CANALS IN THREE INLAND DISTRICTS IN HO CHI MINH CITY, VIETNAM

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ABSTRACT

A study on the snail species composition and their cercariae was conducted in eight sixth-level canals across three inland districts in Ho Chi Minh City, namely Cu Chi, Hoc Mon, and Binh Chanh. The time of the study was in January 2022 (the dry season) and July 2022 (the wet season). A total of 584 snail samples, representing 12 species from 12 genera and 7 families, were collected and identified using morphological methods, with Melanoides tuberculata being the most dominant species. The total number of snail species observed during the rainy season (12 species) was higher than during the dry season (11 species). Four snail species were found to be infected with Xiphidio cercariae: Bithynia siamensis, Filopaludina sumatrensis, Sinotaia lithophaga, and Melanoides tuberculata while Indoplanorbis exustus was infected with Echinostome cercariae. The prevalence of trematode infection in snails was higher in the wet season compared to the dry season ($P<0.05$). The other seven snail species were free of cercariae. The findings provide valuable information about the diversity of snails in the canals of the inland districts of Ho Chi Minh City. Further research on snails and cercariae in canals that supply water directly to fishponds and rice fields is recommended to support sustainable agricultural development.

Keywords: canal; cercariae; inland; snail; trematode; Vietnam

1. Introduction

Snail is the first intermediate host in the life cycle of trematodes (Thai, 2022). Freshwater snails also play an important role in the ecological system of water bodies (Do, 2015). Lots of studies on the diversity of snail species have been done in different areas. Dang et al. (1980) found 47 freshwater snail species in the North of Vietnam. Bui et al. (2010) collected 16 snail species in two communes of the Nghia Phu district of Nam Dinh province, and species of the Bithyniidae, Stenothyridae, and Planorbidae dominated in small

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canals. Nguyen et al. (2014) researched two communes of Tuy An district, Phu Yen province, and got 11 snail species. Ha et al. (2014) discovered 14 freshwater snails from rice fields, fishponds, and canals in Vinh Long and Dong Thap provinces. In Can Gio, Ho Chi Minh City, Nguyen and Pham (2022) collected 16 snail species in 4 sixth-level canals.

Cercariae infections have been observed in numerous snail species. In Nam Dinh province, northern Vietnam, pleurolophocercous, echinostome, and xiphidio cercariae were identified in snails, with *Bithynia fuschiana* and *Melanoides tuberculata* exhibiting the most diverse trematode fauna (Bui et al., 2010). In Tuy An district, Phu Yen province, pleurolophocercariae, xiphidio cercariae, echinostome, monostome, and gymnocephalus cercariae were recovered from 11 snail species (Nguyen et al., 2014). Additionally, xiphidio cercariae, echinostome cercariae, and pleurolophocercous cercariae were detected in *Melanoides tuberculata* and *Bithynia* species in Can Gio, Ho Chi Minh City (Nguyen & Pham, 2022).

In the three inland districts of Ho Chi Minh City, there were several studies on snails and their cercariae in rice fields. *Melanoides tuberculata*, *Filopaludina martensi martensi*, and *Cipangopaludina japonica* in Cu Chi rice field were infected with xiphidio cercariae, furcocercous cercariae, and pleurolophocercous cercariae (Pham & Duong, 2023). Xiphidio cercariae, echinostome cercariae, and cystophorous cercariae were identified in *Bithynia siamensis and Lymnaea viridis* collected from rice fields in Binh Chanh (Pham et al., 2023). *Lymnaea viridis* and *Bithynia siamensis* were infected with Xiphidio cercaria and Echinostome cercariae (Pham, 2024). To learn more about the snail composition in this natural area and its affection for fish culture, research on snails and their cercariae in the small canals in these three inland districts of Ho Chi Minh City was implemented.

2. Materials and methods

Study areas

Madsen et al. (2015) found that snails were mainly distributed in canals, fishponds, and rice fields with the highest trematode prevalence in small canals; therefore, all the sixth-level canals in all three inland districts of Ho Chi Minh City were chosen for the research. The sixth-level canal was the lowest range in the waterway system which connected rivers directly to canals supplying water to rice fields, fish farms, and residential areas. According to Decision No 40/2019/QĐ-UBND by Ho Chi Minh City People's Committee dated 20 December 2019, there were eight sixth-level canals in all these three districts: Cu Chi, Hoc Mon, and Binh Chanh (Table 1).

Table 1. *Total canals in three inland districts of Ho Chi Minh City, Vietnam*

No	Name of canals	District	Sample in the dry season (January 2022)	Sample in the wet season (July 2022)
1	Lang The – Ben Muong canal	Cu Chi	4	4
2	Dia Phan canal	Cu Chi	4	4
3	Cau Menh –Ben Cat canal	Hoc Mon	4	4
4	Ba Ty canal	Binh Chanh	4	4
5	Ba Lon –Chom canal	Binh Chanh	4	4
6	Ba Lao – Ngang canal	Binh Chanh	4	4
7	Tac Ben Ro canal	Binh Chanh	4	4
8	Chieu – Cau Ba Ca canal	Binh Chanh	4	4

Sampling of snails

Two cross-sectional studies on snails were carried out in January 2022 (the dry season) and July 2022 (the wet season). All eight canals in the list were selected for snail examination. Snail sampling was done using a 25-cm wide dredge to scrape the canal bottom from 1.0 m out of the canal bank. A total of four such samples were taken in each canal with a distance of 100 m between sampling points. Each sample was washed in the canal water and collected snails were transferred to cloth bags and transported to the laboratory where they were analysed. Snails were identified as species following the keys of Dang et al. (1980).

Examination of snails for cercariae

Snails were examined for trematode infection (cercariae stage) by shedding method (Frandsen & Christensen, 1984; Bui et al., 2010) in containers of 100 mL small plastic beakers and then left for 12 hours for shedding, and then checked one by one in three days for cercariae at 8:00 AM and 2:00 PM each day. Recognition of cercariae was made by using systematic key references (Frandsen & Christensen, 1984; Schell, 1985).

Data analysis

Microsoft Excel 2010 was used for data entry and SPSS (Statistical Package for Social Sciences version 20; SPSS Inc., Chicago, Illinois) was applied for data analysis. The Chi-squared test was used to compare the difference of prevalence cercariae between seasons. A value of $P<0.05$ was considered significant.

3. Results and discussion

3.1. Snail composition in the canals in three inland districts of Ho Chi Minh City

A total of 584 samples of snails were collected in the dry season in January 2022 (N=209) and in the wet season in July 2022 (N=375). Twelve snail species belonging to 12 genera and 7 families were identified by using morphological methods in the combined seasons. The twelve snail species were *Bithynia siamensis, Filopaludina sumatrensis, Sinotaia lithophaga, Lymnaea viridis, Indoplanorbis exustus, Melanoides tuberculata,*

Sermyla tornatella, Thiara scabra, Tarebia granifera, Pomacea canaliculata, Pila polita, and *Clea helena*. Total snail species in the wet season (12 species) was higher than in the dry season (11 species). The snail species that had the highest number of occurrences was *Melanoides tuberculata* (N=119) and the one that had the lowest presence was *Lymnaea viridis* (N=1) (Table 2).

Table 2. *Total sampled snails in the wet season and the dry season in the research area*

Family	Genus	Species	In January 2022			Total	In July 2022			Total
			CC	HM	BC		CC	HM	BC	
Bithyniidae	*Bithynia*	*Bithynia siamensis*	11	0	2	13	22	0	13	35
Viviparidae	*Filopaludina*	*Filopaludina sumatrensis*	14	4	0	18	17	2	2	21
	Sinotaia	*Sinotaia lithophaga*	25	0	0	25	19	0	0	19
Lymnaeidae	*Lymnaea*	*Lymnaea viridis*	0	0	0	0	0	0	1	1
Planorbidae	*Indoplanorbis*	*Indoplanorbis exustus*	0	1	0	1	1	0	3	4
Thiaridae	*Melanoides*	*Melanoides tuberculata*	31	0	33	64	69	0	50	119
	Sermyla	*Sermyla tornatella*	0	0	15	15	0	0	5	5
	Thiara	*Thiara scabra*	2	0	0	2	0	0	5	5
	Tarebia	*Tarebia granifera*	0	0	4	4	0	0	18	18
Ampullariidae	*Pomacea*	*Pomacea canaliculata*	12	7	28	47	17	5	27	49
	Pila	*Pila polita*	0	0	5	5	6	0	2	8
Buccinidae	*Clea*	*Clea helena*	15	0	0	15	91	0	0	91
		Total				**209**				**375**

Notes: CC (Cu Chi), HM (Hoc Mon), BC (Binh Chanh).

A total of 584 snails were collected in this study, with *Melanoides tuberculata* being the dominant species, represented by 119 specimens. This finding aligns with research conducted in Nam Dinh province, Northern Vietnam, where *Melanoides tuberculata* was also identified as the most prevalent species in canals (Madsen et al., 2015). However, the composition of snail species in this study—12 species found in 8 sixth-level canals across

three inland districts—differed entirely from the 16 snail species identified in 10 coastal sixth-level canals of Can Gio district, Ho Chi Minh City (Pham & Nguyen, 2024). Although all snails were from the sixth-level canals and in Ho Chi Minh City, the environmental conditions were different from the coastal and the inland districts, so the snail species was very different. The comparison of snail species within the research canals showed that the snail species in the sixth-level canals among the inland districts were also not the same. Snail species were more abundant in Binh Chanh (N=10) and Cu Chi (N=9) districts than in Hoc Mon (N=3). The fieldwork indicated that the water speed in the canals in Hoc Mon district was as fast as in the rivers whereas it was slow in Binh Chanh and Cu Chi districts. Therefore, it is concluded that the location of canals could influence the snail species composition, and the water speed in the sixth-level canals in inland areas could affect the presence of snails. More research on lower levels of canals should be done to investigate the distribution of snail species in the area.

3.2. Cercariae morphotypes infected in snails in the research area

Cercariae were detected exclusively in snails collected from Lang The – Ben Muong canal in Cu Chi and Ba Ty canals in Binh Chanh. Snails from other canals were free of cercariae. Xiphidio cercariae were found in four snail species: *Bithynia siamensis, Filopaludina sumatrensis, Sinotaia lithophaga, and Melanoides tuberculata.* Echinostome cercariae were identified in *Indoplanorbis exustus. Sinotaia lithophaga* exhibited cercariae infection in both seasons, while the other species were infected only during the wet season. The trematode prevalence in the five infected snail species was significantly higher in the wet season compared to the dry season ($P<0.05$) (Table 3).

Table 3. *Number of snails infected with different cercariae morphotypes*

No	Snail species	Infected snails/ Total samples in the dry season	Infected snails/ Total samples in the wet season	Prevalence in the dry/ in the wet seasons (%)	Morphotypes of cercariae	
					Dry season (January 2022)	Wet season July 2022)
Lang The – Ben Muong canal (Cu Chi district)						
1	*Sinotaia lithophaga*	1/25	1/19	4.0/ 5.3	*Xiphidio cercariae*	*Xiphidio cercariae*
2	*Filopaludina sumatrensis*	0/14	1/17	0.0/5.9	*0*	*Xiphidio cercariae*
3	*Bithynia siamensis*	0/11	6/22	0.0/27.3	*0*	*Xiphidio cercariae*
Ba Ty canal (Binh Chanh district)						
4	*Melanoides tuberculata*	0/33	2/50	0.0/ 4.0	*0*	*Xiphidio cercariae*
5	*Indoplanorbis exustus*	0/0	1/3	0.0/33.3	*0*	*Echinostome cercariae*

It was obvious that *Bithynia siamensis*, *Melanoides tuberculata* and *Filopaludina sumatrensis* in the rice fields in this research area were infected with cercariae (Pham & Duong, 2023; Pham et al., 2023). They were also infected in the canals in this research. This findings confirmed again that *Melanoides* and *Bithynia* snails were easy to infect cercariae. This finding was like the previous research that *Melanoides* and *Bithynia* snails were infected with a high prevalence in canals (Bui et al., 2010; Nguyen et al., 2014). *Filopaludina sumatrensis* from canals, rice fields, and fishponds in Phu Yen province was not infected with cercariae (Nguyen et al., 2014), however; one *Filopaludina sumatrensis* in the canal in this research was infected. This confirms the infection of this snail species in this area. *Sinotaia lithophaga* was not infected with cercariae (Nguyen et al., 2014; Pham and Duong, 2023), but it was found infected in both the dry and the wet seasons in this research. For *Indoplanorbis exustus*, it infected the same cercariae as in the research by Nguyen et al. (2014) and it was a new finding in the research area.

Snails from eight sixth-level canals were collected, but only snails in Lang The – Ben Muong canal in Cu Chi district and Ba Ty canal in Binh Chanh district were infected with cercariae of trematodes. The question was what the differences among the canals were. It was clear for Lang The – Ben Muong canal that this canal was located in the area where there were seven dogs raised on the canal bank and 80 ducks on the bank and in the water of the canal; therefore, the trematode eggs from dogs and ducks'feces might fall into the canal and snail would be infected. For Ba Ty canal, although the exact data of livestock and domestic animals were not recorded, the observation during the fieldwork showed that there were a lot of local people's houses along the banks of the canals with their animals; consequently, more risks for snails in the canal to get infected with cercariae of trematodes like the ones in Lang The – Ben Muong canal. Except for the canals in Hoc Mon district with the fast speed of water to prevent the chance for the snail to get the trematode eggs, if there were any, the other canals were far from the residential areas and animal pens; therefore, they had less risks for the infections. More research on the epidemiology of snail infection in this research should be done to know the sources of infections of trematodes in snails in this research area.

Two morphotypes of cercariae were identified in the study, with xiphidio cercariae being dominant and present in 11 of 12 infected snails. This finding aligns with previous research indicating that xiphidio cercariae are the most prevalent type in snails from ponds and streams (Nkwengulila & Kigadye, 2005). It also corroborates studies conducted in Ho Chi Minh City, where xiphidio cercariae were found in 8 of 10 snails in Can Gio district rice fields (Nguyen & Pham, 2022), 16 of 19 snails in Cu Chi district rice fields (Pham & Duong, 2023), and 13 of 16 snails in Binh Chanh district rice fields (Pham et al., 2023). Regarding echinostome cercariae, this study reaffirms that *Indoplanorbis exustus* is a suitable host for these parasites (Nguyen et al., 2014). The presence of echinostome cercariae in Binh Chanh

district is consistent with previous findings in rice fields of the same district (Pham et al., 2023). However, these cercariae were not detected in the rice fields of Can Gio district (Nguyen and Pham, 2022), Cu Chi district (Pham & Duong, 2023), or Nha Be district (Pham, 2023).

Only one snail was infected with cercariae of trematodes in the dry season and 11 snails recovered cercariae in the wet season ($P<0.05$). This was completely different from other studies which found that infection by trematode larvae in snails was high in the dry season and low in the wet season (Nkwengulila & Kigadye, 2005) because of the temperature (Nguyen et al., 2014). However, the finding in this research was similar to what Nguyen and Pham (2022) studied on snails in Can Gio rice fields that the prevalence in the wet season was much higher than in the dry season. It could be explained that the wet season with lots of rain might be a very suitable period for the development of snails (Pham et al., 2007) and very much involved in the transmission of trematodes and fluke eggs shed into the environment to be washed into water bodies through run-off (Long-Qi et al., 2005). The exact reason why snails had a higher prevalence of trematode in this season than in that season was not clear enough. However, the fluctuation of trematode prevalence in different months was obvious, so more research should be done in the future to examine the risks of the occurrence of trematodes to contribute to the control of fishborne zoonotic parasites.

4. Conclusions

Twelve snail species belonging to 12 genera and 7 families were collected and *Melanoides tuberculata* was the most dominant. The total number of snail species in the rainy season (12 species) was higher than in the dry season (11 species). *Bithynia siamensis*, *Filopaludina sumatrensis*, *Sinotaia lithophaga*, and *Melanoides tuberculata* were infected with Xiphidio cercariae whereas *Indoplanorbis exustus* infected with Echinostome cercariae. The trematode prevalence in snails in the wet season was higher than in the dry season ($P<0.05$). Further research on snails and cercariae in the study area is warranted to obtain more comprehensive data on their distribution. Such investigations would provide a clearer understanding of the spatial patterns of snail populations and their associated cercariae in the region.

❖ ***Conflict of Interest:*** *Authors have no conflict of interest to declare.*

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REFERENCES

Bui, T. D., Madsen, H., & Dang, T. T. (2010). Distribution of freshwater snails in family-based VAC ponds and associated waterbodies with special reference to intermediate hosts of fi sh-borne zoonotic trematodes in Nam Dinh Province, Vietnam. *Acta Tropica, 116,* 15-23. https://doi.org/10.1016/j.actatropica.2010.04.016

Dang, N. T., Thai, T. B., & Pham, V. M. (1980). *Key of identification Invertebrate in the North of Vietnam*. Technology and Science Publisher.

Do, V. T. (2015). Freshwater snails of Vietnam: diversity and conversation status. *The sixth National scientific conference of ecology and biology resources* (pp. 977-986).

Frandsen, F., & Christensen, N. Ø. (1984). An introductory guide to the identification of cercariae from African freshwater snails with special reference to cercariae of trematode species of medical and veterinary importance. *Acta Tropica, 41*, 181-202.

Ha, H. H. V., Nguyen, H. H., & Nguyen, H. B. T. (2014). Identification freshwater snail intermediate host of trematoda causing animal disease in Vinh Long and Dong Thap Province. *Can Tho University Journal of Science. No. Agriculture, 2*, 8-12.

Long-Qi, X., Sen-Hai, Y., & Ying-Dan, C. (2005). *Clonorchis sinensis in China*. In: Arizono, N, Chai, JY, Nawa, Y, Takahashi, Y (Eds), *The Federation of Asian Parasitologists* (Volume 1, 2005, pp. 1-26). Chiba, Japan.

Madsen, H., Bui, T. D., Dang, T. T., Nguyen, K. V., Dalsgaard, A., & Phan, T. V. (2015). The role of rice fields, fishponds and water canals for transmission of fish-borne zoonotic trematodes in aquaculture ponds in Nam Dinh Province, Vietnam. *Parasites Vectors, 8*, 625. https://doi.org/10.1186/s13071-015-1237-z

Nguyen, P. B. N., Nguyen, C. L., Vo, T. D., & Ngo, A. T. (2014). Infection of trematode larvae (cercariae) in freshwater snails in two communes, An My and An Hoa, Tuy An district, Phu Yen province. *Journal of Science-Fisheries Technology, 1*, 166-170.

Nguyen, T. D., & Pham, C. T. (2022). The composition and trematode infections in snails in small canals and rice fields in Binh Khanh and Ly Nhon communes, Can Gio district, Ho Chi Minh City. *Scientific proceedings for Master and Doctoral students of Ho Chi Minh City University of Education in the school year of 2022-2023* (pp. 32-40). ISBN 978-604-367-110-0

Nkwengulila, G., & Kigadye, E.S.P. (2005). Occurrence of Digenean larvae in freshwater snails in the Ruvu Basin, Tanzania. *Tanzania Journal of Science, 31*(2), 23-30. https://doi.org/10.4314/tjs.v31i2.18417

Pham, C. T., Dalsgaard, A., Bui, N. T., Olsen, A., & Murrell, K. D. (2007). Prevalence of fishborne zoonotic parasites in important cultured fish species in the Mekong Delta, Vietnam. *Parasitology Research, 101*(5), 1277-1284. https://doi.org/10.1007/s00436-007-0633-5

Pham, C. T. (2023). Snail composition and its cercariae in Hiep Phuoc rice field of Nha Be district, Ho Chi Minh City, Vietnam. *Tra Vinh University Journal of Science, 13*(2), 53-58. https://doi.org/10.35382/tvujs.13.2.2023.1936

Pham, C. T. (2024). Snail composition and its cercariae in rice field of Hoc Mon district, Ho Chi Minh City, Vietnam. *The Journal of Agriculture and Development, 23*(3), 23-31.

Pham, C. T., & Duong, T. Q. (2023). The composition of snail species and cercariae in snails in rice field of Cu Chi district, Ho Chi Minh City, Vietnam. *Ho Chi Minh City University of Education Journal of Science, 20*(5), 808-817. https://doi.org/10.54607/hcmue.js.20.5.3808

Pham, C. T., & Nguyen, T. D. (2024). Digenean infections in snails (cercariae stage) in Can Gio Mangrove Biosphere Reserve, Ho Chi Minh City, Vietnam. *Heliyon*, *10*(6), E27923. https://doi.org/10.1016/j.heliyon.2024.e27923

Pham, C. T., Nguyen, T. L. X., & Duong, T. Q. (2023). Research on the composition of snail species and cercariae in snails in Tan Nhut rice field of Binh Chanh district, Ho Chi Minh City, Vietnam. *Ho Chi Minh City University of Education Journal of Science, 20*(6), 957-967. https://doi.org/10.54607/hcmue.js.20.6.3844

People's Committee of Ho Chi Minh City. (2019). *Decision No 40/2019/QĐ-UBND about promulgating of the regulations of the decentralization for Departments and People's Committees of districts to manage, explore the rivers and canals systems in Ho Chi Minh City*.

Schell, S. C. (1985). *Handbook of trematodes of North America*, North of Mexico. University Press of Idaho.

Thai, T. B. (2022). *Invertebrates.* Vietnam Education Publishing House.

THÀNH PHẦN LOÀI ỐC VÀ TỈ LỆ NHIỄM ẤU TRÙNG SÁN LÁ SONG CHỦ TRÊN ỐC TRONG KÊNH NHỎ CỦA BA HUYỆN NỘI ĐỒNG Ở KHU VỰC THÀNH PHỐ HỒ CHÍ MINH, VIỆT NAM

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TÓM TẮT

Thực hiện khảo sát trong 8 kênh cấp VI ở ba huyện nội đồng của Thành phố Hồ Chí Minh gồm Củ Chi, Hóc Môn và Bình Chánh để nghiên cứu thành phần loài ốc và tỉ lệ nhiệm cercariae trên ốc được thực hiện vào tháng 1/2022 (mùa khô) và tháng 7/2022 (mùa mưa). Tổng số 584 mẫu ốc đã được thu thuộc 12 loài, 12 giống, 7 họ được định loại theo phương pháp hình thái. Trong đó, Melanoides tuberculata chiếm tỉ lệ cao nhất. Tổng số loài ốc trong mùa mưa (12 loài) nhiều hơn mùa khô (11 loài). Bốn loài ốc bị nhiễm Xiphidio cercariae gồm có Bithynia siamensis, Filopaludina sumatrensis, Sinotaia lithophaga và Melanoides tuberculata trong khi Indoplanorbis exustus nhiễm Echinostome cercariae. Tỉ lệ nhiễm sán lá song chủ trên ốc trong mùa mưa cao hơn trong mùa khô ($P<0.05$). Bảy loài ốc còn lại không bị nhiễm sán lá. Kết quả nghiên cứu cung cấp thông tin về đa dạng thành phần loài ốc trong kênh của huyện nội đồng thành phố Hồ Chí Minh. Cần nghiên cứu thêm thành phần loài ốc và tỉ lệ nhiễm Cercariae trên ốc trong kênh cấp nước trực tiếp cho ao nuôi cá và ruộng lúa để góp phần phát triển nông nghiệp bền vững.

Từ khóa: kênh; cercariae; nội đồng; ốc; sán lá song chủ; Việt Nam