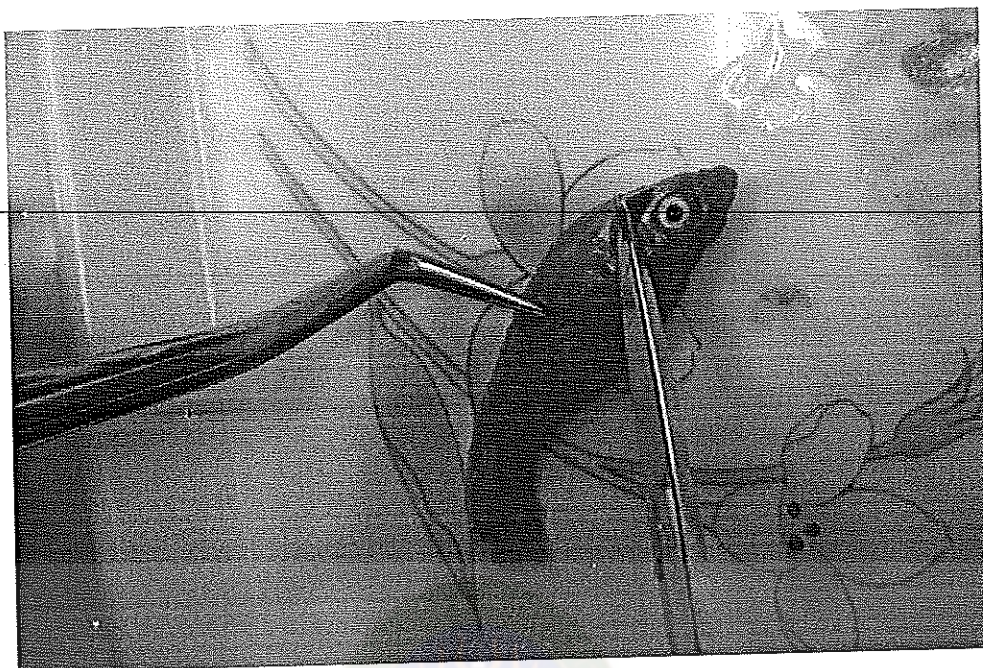


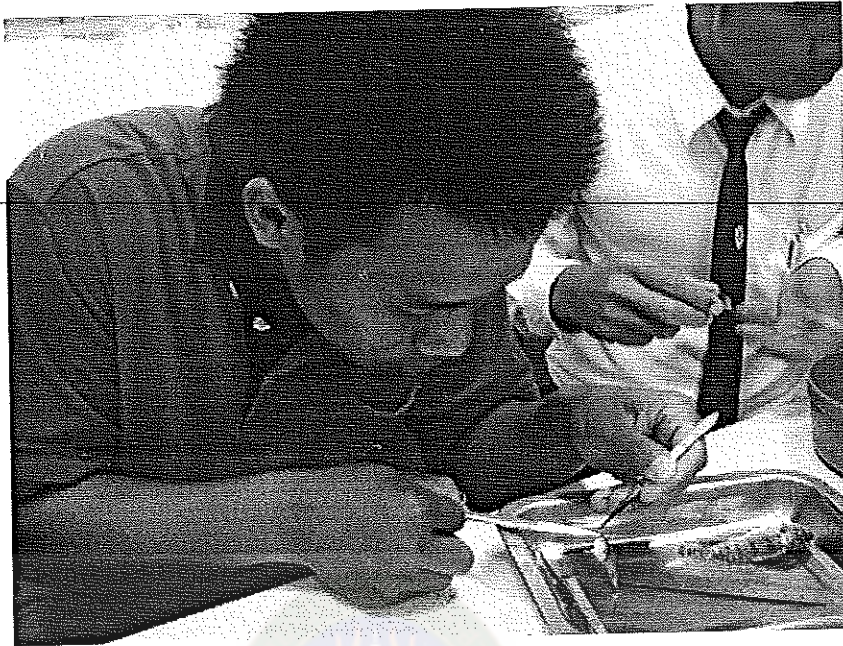


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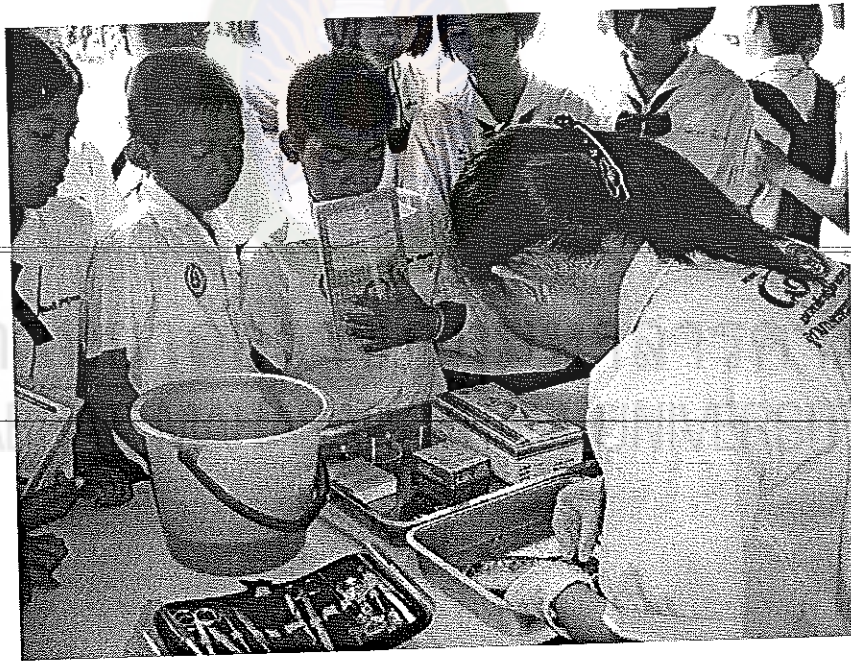
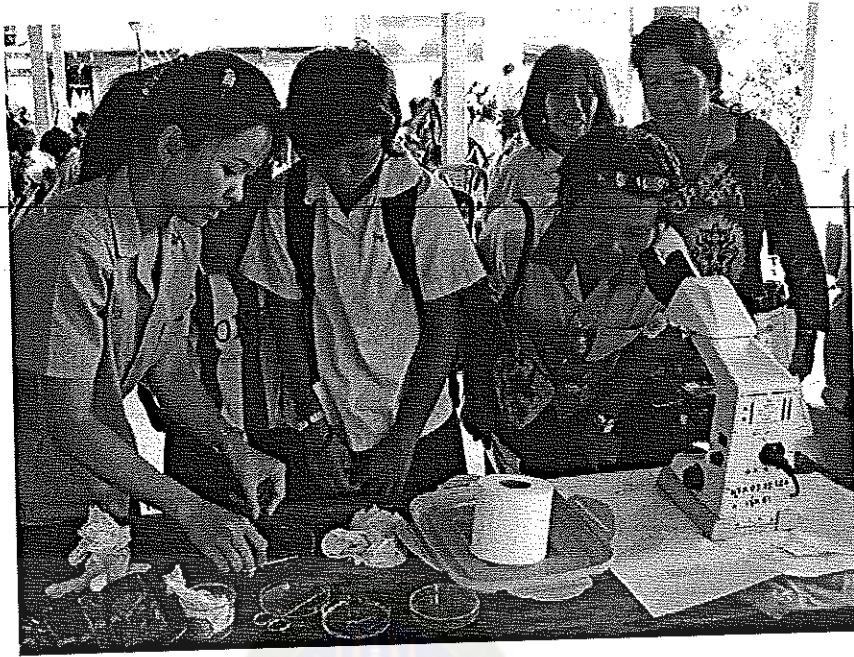


ภาพที่ 7 การตรวจปรสิตภายนอกที่เหงือกปลาสวยงามที่ทำการศึกษา

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ภาพที่ 8 การบูรณาการการวิจัยทางโรคปรสิตร่วมกับการจัดการเรียนการสอน



ภาพที่ 9 การเผยแพร่ผลงานวิจัยสู่เกษตรกร และนักเรียน

Parasitic diseases of ornamental fishes in Muang District, Maha Sarakham Province

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Abstract

Parasites of ornamental fishes in Muang District, Maha Sarakham Province were investigated. Parasites in Goldfish *Carassius auratus*, guppy *Poecilia reticulata*, sword fish *Xiphophorus helleri* and balloon molly *Poecilia latipinna* were examined from August 2010 to January 2011. Abnormal fish showing some clinical signs were first selected, and second the other fish were randomly chosen. Two hundred forty fishes in total were obtained from 2 aquarium shops and 1 private farm. The fish were monthly surveyed. The parasites detected from the fishes were *Gyrodactylus* spp., *Dactylogyrus* spp., *Trichodina* spp., *Ichthyophthirius multifiliis* and *Tetrahymena* spp. *Trichodina* spp. showed the highest prevalence (43.3 – 75%), and followed by monogenean (21.7 – 60%), *Tetrahymena* spp. (25 – 43.3%), and *I. multifiliis* (20 – 25%). A lot of parasites were found in goldfish, and guppy, swordtail and balloon molly in order. It was thought that treatment to inhibit the spread of the parasitic diseases and prevent the economic losses in fish culture is important.

Keywords: Fish parasites, Ornamental fish, Prevalence and Mahasarakham

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Introduction

Ornamental fish is an economically important aquatic animals which could be exported to foreign countries. Among the major commercialized fish, goldfish *Carassius auratus*, guppy *Poecilia reticulata*, swordtail, *Xiphophorus helleri* and balloon molly *Poecilia latipinna* are popular for customers. Parasitic diseases appear to be one of the major diseases that cause severe damage and economic losses in ornamental fishes. The diseases are mainly caused by protozoan parasites (Durborrow, 2003), which live in the aquatic environment. There are a variety of protozoan which infest the gills and skin of fish causing irritation, weight loss, and finally death (Francis-Floyd, 1997). An objective of this paper is to determine the species diversity and species prevalence of parasites from four kinds of ornamental fish in Muang District, Maha Sarakham Province.

Materials and methods

During the period of August 2010 through January 2011, the ornamental fish such as goldfish, guppy, swordtail and balloon molly were randomly sampled from 2 aquarium shops and 1 private farm in Muang District, Maha Sarakham Province. Each ten fish per shop was monthly collected and examined for parasitic infection. Moreover, fish were primarily selected according to signs of illness, otherwise fish were randomly chosen. Live fish were carried to the laboratory and the standard examinations were done.

Namely, gross appearance, body color, hemorrhages, abnormal characteristics were observed. Diagnostic examination for external parasites was conducted following the methods of Zafran *et al.* (1998). Parasitic identification was carried out according to Woo (2006). The prevalence of the parasites was also evaluated (Margolis *et al.*, 1982).

Results and discussion

Two hundred forty fishes in total were obtained from 2 aquarium shops and 1 private farm. The parasites detected from the fishes were *Gyrodactylus* spp., *Dactyrogyrus* spp., *Trichodina* spp., *Ichthyophthirius multifiliis* and *Tetrahymena* spp. (Table 1). *Trichodina* spp. (43.3 – 75%) showed the highest prevalence, and followed by monogenean (21.7 – 60%), *Tetrahymena* spp. (25 – 43.3%), and *I. multifiliis* (20 – 25%) (Table 2). A lot of parasites were found in goldfish, and guppy, swordtail and balloon molly in order. Prevalence rate of *Trichodina* infestation observed in this study was similar to Martin *et al.* (2002) who reported the range of 7.7 – 87%. The predisposing factors for *Trichodina* infection was high levels of organic matter in water could be caused stress in fish and reduce diseases resistance Rottman *et al.* (1992). Klinger and Floyd (1998) and Andrews *et al.* (2003) suggested that most fish problems occur because of environmental problems such as poor water quality, crowding, and dietary deficiency. It was thought that treatment to inhibit the spread of the parasitic diseases and prevent the economic losses in fish culture is important.

Table 1 Ornamental fish from Muang District, Mahasarakham Province, their common name and parasites prevalence. PF: parasitized fish; EF: examined fish; P^a: parasites prevalence in relation to the total number of each examined fish; P^b: parasites prevalence in relation to the total number of examined fish

Species	Common name	PF/EF	P (%) ^a	P (%) ^b
<i>Carassius auratus</i>	Goldfish	45/60	75	18.8
<i>Poecilia reticulata</i>	Guppy	37/60	61.7	15.4
<i>Xiphophorus helleri</i>	Swordtail	30/60	50.0	12.5
<i>Poecilia latipinna</i>	Balloon molly	26/60	43.3	10.8
Total	-	138/240	-	57.5

Table 2. Prevalence of parasites in ornamental fish from Muang District, Maha Sarakham Province

	<i>Gyrodactylus</i> spp.	<i>Dactyrogyrus</i> spp.	<i>Trichodina</i> spp.	<i>Ichthyophthirius multifiliis</i>	<i>Tetrahymena</i> spp.
Goldfish	36/60 (60%)	30/60 (50%)	45/60 (75%)	-	-
Guppy	-	-	37/60 (61.7%)	15/60 (25%)	23/60 (38.3%)
Swordtail	13/60 (21.7%)	-	30/60 (50%)	9/60 (20%)	26/60 (43.3%)
Ballon molly	-	-	26/60 (43.3%)	-	15/60 (25%)

Conclusion

Parasitic diseases appear to be one of the major diseases that cause severe damage and economic losses in ornamental fishes. The diseases are mainly caused by protozoan parasites (Durborrow, 2003), which live in the aquatic environment. The parasites detected from the fishes were *Gyrodactylus* spp., *Dactyrogyrus* spp., *Trichodina* spp., *Ichthyophthirius multifiliis* and *Tetrahymena* spp. A lot of parasites were found in goldfish, and guppy, swordtail and balloon molly. It was thought that treatment to inhibit the spread of the parasitic diseases and prevent the economic losses in fish culture is important.

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ตำแหน่ง อาจารย์

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