قسم: الأسماء
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بعض الدراسات على الميتاسكاريا المتحولية في أسماك الشلبة النيلية

بمحافظة سوهاج

٢- دراسة على تأثير الأحماض المنزلية المختلفة على حيوية الميتاسكاريا لديدان
سنكوندورات إبراهيميلا، بروهيستوم فيفاكس

* * *
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درس الباحثون تأثير الأحماض المختلفة على حيوية الميتاسكاريا مثل حامض
الخليك المخفف التجاري ٦٠% وكذلك حامض الليمون "عصارة الليمون" لديدان
استكمل استكشافا تrary ديكتينيلا بروهيستوم فيفاكس الموجودة بين عضلات سماك
الشلبة النيلية بمحافظة سوهاج، وقد تم التأكد من كون الميتاسكاريا حية أو ميتة
بفحصها ميكروسكوبيا وبعدوى الكتبي الصغيرة.

انتح من الدراسة أن حامض الخليك أكثر تأثيرا من حامض الليمونيك على حيوية
الميتاسكاريا وقرر أن النتائج المختلفة بالأحماض واتضح أن نسبة التركز من حامض
الخليك ١٠٠ تؤدي إلى قتل كل الميتاسكاريا، أما نسبة ٥ تؤدي إلى ٥%، ١٠%، ٢٥% من
نسبة تركز حامض الليمونيك ١٠٠، ٥٠، ٢٥% أدى إلى قتل كل الميتاسكاريا
أما نسبة ١، ٥%، ٢٥% من نفس الحامض أدت إلى قتل ١٨%، ١١%، ٩% على التوالي.

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SOME STUDIES ON METACERCARIAL INFECTION IN
SCHILBE MYSTIS FRESH WATER NILE FISH AT
SOHAG PROVINCE, EGYPT
THE EFFECT OF HOUSE HOLD DILUTED ACIDS ON THE
VIABILITY AND INFECTIVITY ON THE METACERCARIAE
OF STICTODORA TRIDACTYLA MARTIN & KUNTZ, 1955 AND
PROHEMISTOMUM VIVAX SONSIND, 1892
(With One Table)

By
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SUMMARY

The effect of house-hold diluted acids on the metacercariae
of Stictodora tridactyla and prohemistomum vivax infecting
the Nile fresh water fish Schilbe mystis in Sohag province
is studied. The effect of Acetic acid (commercial venjar,
6%) was found to be more drastic than the effect of Citric
acid (Lemon juice). Results of such work lead to the conclusion
that the dilutions of Acetic acid (100%, 50%, and 25%) were
lethal to all metacercariae exposed for 24 hs. On the other
hand, the dilutions of acetic acid (5%, 1%, 0.5% and 0.25%)
were lethal to 25%, 11%, 5% and 2% of exposed metacercariae
respectively. The dilutions of Citric acid (100%, 50% 25% and
5%) were lethal to all metacercariae exposed for 24 hs. On
the other hand, the dilutions of Citric acid (1%, 0.5%, and
0.25%) were lethal to 18%, 11% and 9% of exposed metacercar-
iae respectively. Test of the viability and infectivity of the
metacercariae was done by microscopic examination but also
by experimental infection in domestic fowls.

INTRODUCTION

Schilbe mystis is a relatively common fish which is consumed in large quantities due
to its relatively cheaper price than other fish species. NASR (1941) showed that Prohemistomum
vivax was the cause of death in a human case. Other haplorchid parasites were also recorded
to infect man (WATSON, 1960). Nevertheless, some other intestinal trematodes are now believed
to be transmissible to man through the agency of fish.

During the course of this study, the present authors found that Schilbe mystis is parasitized
by the metacercariae of Stictodora tridactyla MARTIN & KUNTZ (1955) and Prohemistomum
vivax SONSIND, (1892). Therefore, the present authors studied the effect of different dilutions

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N.A.M. MAHMOUD, et al.

of House-hold acids which commonly used in the House-hold life on these fishes, aiming to find their effect on the encysted metacercariae of the mentioned parasites instead of Freezing and Salting FAHMY, et al. (1980). Freezing and Grilling YOUSSEF, et al. (1981) which take a time longer than 24 hs.

MATERIAL and METHODS

Fish:
A total of 100 Schilbe mystis Nile fresh water fish was collected from Sohag Province markets, apparently healthy and fresh. External examinations are carried on body surface, gills, mouth, eyes, and fins to prove the metacercarial localization JOHN (1966). By compression technique method, metacercariae are obtained and examined microscopically by using snips of muscles from the area near the dorsal fins and tail MORISHITA, et al. (1965). The obtained viable metacercariae are used for experiments.

The house-hold diluted acids:

The following acids commonly used in House-hold life were chosen in the usual concentrations applied. They are sold under the trade names, Lemon juice (Citric acid), commercial venjar (Acetic acid 6%). Dilutions were prepared from each acid using distilled water beginning with 100%, 50%, 25%, 5%, 1% 0.5% and ending with 0.25%. The solutions were freshly prepared just before each experiment. Room temperature ranged from 20-30°C.

Procedure:

A clear, dried, small petri-dishes were prepared filled with Five ml of each House-hold acids dilutions and 100 cysts of metacercariae per petri-dish, i.e. 7 petridishes for each experiment.

Viable metacercariae were found to be transparent, double wall, containing active (motile) larvae. These petridishes were covered by its cover and left for 24 hs. at Room temperature. A control test for each dilution of the tested compounds was prepared by adding 5 ml of distilled water instead of dilutions. After 24 hs. exposed period, the viability and infectivity of metacercariae were determined not only by microscopic examination but also by experimental infection of newly hatched chicks (One day old chicks). After 15 days the control and the experimentally infected newly hatched chicks were sacrificed looking for and counting the raised adults of the parasites.

RESULTS

Effect of Acetic Acid (commercial venjar, 6%), when the exposure time was 24 hs. At 100% (6%), 50% (3%), 25% (1.5%), the death rate was 100%. At 5% (0.3%), 1% (0.06%), 0.5% (0.03%) and 0.25% (0.015%). The death rate was decreased from 25%, 11%, 5% and 2% respectively. On the other hand, the recovery rate was increased from 29.33, 38.20, 50.52 and 57.14 respectively (Table 1).

The effect of Citric Acid (Lemon juice), when the exposure time was 24 hs. At 100%, 50%, 25% and 5%, the death rate was 100%. At 1%, 0.5% and 0.25%, the death rate was decreased from 18%, 11%, and 9% respectively. On the other hand, the recovery rate was increased from 37.80, 47.19 and 58.24 respectively (Table 1). The dead metacercariae were shrunken with a dark colour, and a good space between it and the cyst wall.

EFFECT OF ACIDS ON METACERCARIA

DISCUSSION

According to the data shown in Table 1, the present authors concluded that there is a little variation between the effect of Acetic Acid (commercial vinegar, 6%) and the Citric Acid (Lemon juice). The death rate among the metacercariae of Stictodora tridactyla and Prohemistomum vivax exposed for 24 hrs was more pronounced by Acetic Acid than Citric Acid. The present study is therefore, done for the first time in Egypt.

REFERENCES


Table (1)
The effect of House-hold Diluted Acids on the viability and infectivity on Metacercariae of Stictodora tridactyla Martin & Kuntz, 1955 and Prohemistomum vivax Sonsino, 1892

<table>
<thead>
<tr>
<th>House-hold Acids Dilutions</th>
<th>Number of cysts per dish</th>
<th>Number of movable larvae per dish</th>
<th>Percent of Viability</th>
<th>Number of cyst per chick</th>
<th>Number of worms recovered per chick</th>
<th>Percent worm recovery</th>
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<tr>
<td>I- Acetic Acid (commercial, 6%)</td>
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<tr>
<td>100% (6%)</td>
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<td>50% (3%)</td>
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