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## Study of Treatment Advantage of Medicinal Herbs with Antihelmintic Effect against Neoscarisiasis

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**Abstract:** Treatment effect of *Artemisia absinthium*, *Hypericum perforatum* and *Thymus transcaucasicus* of medicinal herbs with antihelmintic effect against neoscarisiasis has been studied. *Artemisia absinthium* infusion most rapidly effect ed onto neoscarisiasis in vitro condition. But effect of other infusions were weaker. Treatment advantage of on-farm dehelmintization with extractions of the same plants was observed.

**Keywords:** *Artemisia absinthium* L., *Hypericum perforatum*, *Thymus transcaucasicus* Ronn., Medicinal herbs, Antihelminth, Neoscarisiasis

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### 1. INTRODUCTION

Wide ethnobotanical investigations concerning to use of the medicinal plants in veterinary in Azerbaijan flora have been carried out and was tested in scientific medicine [Kerimov et al, 2010]. Treatment effect of medicinal herbs with antihelmintic effect as: *Artemisia absinthium*, *Hypericum perforatum* and *Thymus transcaucasicus* species against neoscarisiasis were firstly determined on the base of inquiry implemented among people as well as literature reference information [Ibadullayeva et al, 2013].

*Artemisia absinthium* is a perennial grass plant belonging to Asteraceae familiy. All species of the genus have got specific aroma and bitter taste. Its stem and leaves have got essential oils up to 2% rich with tuyan, tuyol, felandren, seskiterpen, lactic oils, absinthe, apabsintin, artabsin (*Artemisia absinthium*), tanning agent matters, flavonoids and glycosides [Aleskerova, 2013].

In the period of blossom of the wormwood *Artemisia absinthium* a special bitter matter – tauremizine (1,5%) is accumulated in its leaves and stems. Bioactive substances have been determined in roots and surface part of the plant [Aleskerova, 2005; Serkerov et al, 2003].

*Hypericum perforatum* is of Hypericaceae family. It is a perennial herb has got a thin branchy rhizomatous body. Usual collection period is its flowering period. The followings were ascertained in its content: flavonoids – (in its flowers) 1.1% of hyperozid, (in its grass) 0.7% of rutin, quercitin, dying photodynamic substances (0,1-0,4%) of hypericine, pseudohypericine and its derivatives, pyrocatechin derived tanning agents (9-10%); essential oil (0.25%); saponins, choline (34 mgs); resin substances (up to 10% of nicotine acid and its amid, organic acids) 3.48% et.al. [Golovkin, 2002]. In the content of *Hypericum perforatum* the following substances have been obtained as: 12% of tanning agent, 0.3% of essential oil, 17% of tar, azolane, saponin et.al. [Ayshegul, 2009].

*Thymus transcaucasicus* Ronn. Is of Lamiaceae family. It is a perennial herb. The herb is spread on the ground and is not so high, it has got less leaves and its flowers are white or pink tint. Mainly it is spreading in upland regions; especially it is widely spread in the regions without forests. All its species has got sharp specific smell. Though it has 36 species in Caucasus, mainly 2 of them *Thymus transcaucasicus* and *Th.kotschyanus* are widely spread here. It blossoms in June-July but its fruit are formed in August. There is 0, 1-0, 5% essential oil in the content of *Thymus transcaucasicus* the base of which consists of tymol and other compounds. Essential oils in the content of *Th.kotschyanus* Species are 18-0, 5%. Essential oils have got vermifuge, antiseptic and bactericide effects. Moreover its water infusion is used in dysentery, other digestive diseases also it is used as alkali-removing and diuretic [Kasumov, 2007].

## 2. MATERIALS AND METHODS

According to adopted rules in pharmaceutics an extraction of herbs that subjected to test was prepared to carry out experiments on study of *in vitro* effect of medicinal herbs onto *Neoskaris vitulorum*. On this purpose first of all stem, leaves and fruits stated in surface part of herbs were grinded into small particles in a mill. The grinded mass was put into a glass and in the rate of 1:5 some water was added onto it. It was put into a water bath/bain-marie within 30 minutes and some infusion was prepared. After preparing the infusion on the purpose of provide 1:5 rate of water was added into each cup in the amount of the evaporated water. The new prepared infusion was used each time when an experiment was carried out [Maharramov, 2011; İbadullayeva et al, 2013].

To study antihelmintic effect of the medicinal herbs in condition of *in vivo*, fecal samples have been taken from naturally neoscaride-infected calves at 3 farms, as well as carpological surveys were carried out by the Fülleborn Method in the Helminthology Lab of the Azerbaijan Scientific-Research Veterinary Institute. In these surveys infected calves of 1-3 months aged have been used.

Experiment was carried out in 2 directions in the condition of *in vitro*. Motion reduce of helminthes on the result of herbs infusion effect in the 1-st direction and percentage of neoscarides eradication in different variants were possible to determine. The experiments in both directions were carried out by the same methodic rule.

## 3. DISCUSSION AND RESULTS

In the process of the research neoscarides naturally got from the calf have been slightly washed (not rumpling and/or not harming its structure) in a physiological solution and was placed in 5 Petri cups. 25 adult alive female neoscarides per each cup were used in the 1-st cerium and 30 neoscarides were used in the 2-nd cerium. Since the moment as the neoscarides were placed into the cups infusions of *Artemisia absinthium*, *Hypericum perforatum*, *Thymus transcaucasicus* in 1:5 ratio were separately added onto the neoscarides in the equal quantity (100 mls). 100 ml of the newly prepared physiological solution was added onto the neoscarides in the 5-th cup on the controle purposes. Infusions and physiological solutions with 37°C heat were used in all experimental groups. Consequently the Petri cups that have been under controle in the experiment were placed into a thermostat with 37-38°C temperature; every 10-15minutes the following parameters were determined: motion of helminthes, time of their motion reduce, full stop of their motion, time of start and end of destruction of the helminthes strictly by hours and minutes (on the 1-st direction). Destruction percentage of the ascarides was determined at the start of destruction on the 2-nd direction. In some cases to make sure in destruction of the neoscarides which completely stopped their motion - they were taken out of the infusion kept in physiological solution with 37-38°C temperature and was defined whether its motion was restored or not.

Start time of reduction of the helminthes Petri cups filled with infusion of *Artemisia absinthium* was 3hours 30minutes; stop of their motion and time of start of destruction of the helminthes was 5hours 10minutes; time of all neoscarides destruction was 6 hours 15minutes. Start of the motion reduction of the helminthes was 6 hours 10 minutes in the Petri cup added *Thymus transcaucasicus*, *Hypericum perforatum* infusion; stop of their motion and time of start of destruction of the helminthes was 8hours 10minutes; time of all neoscarides destruction was 9hours 20minutes. Start time of reduction of the helminthes Petri cups filled with infusion of *Thymus transcaucasicus* was 8hours 10minutes; stop of their motion and time of start of destruction of the helminthes was 10hours 05minutes; time of all neoscarides destruction was 14 hours 10 minutes.

As it was indicated in the Table 1 the fastest effect onto the neoscarides in the condition of *in vitro* was by the infusions of *Artemisia absinthium*. But effect of other infusions was weaker.

An infusion of medicinal herbs that firstly would be tested at carves has been prepared in accordance with the adopted in Pharmaceutics rule in 1:5ratio(one part – medicinal herb and 5 parts water) in the farms. The infusion was prepared (extempore) in that day when it would be used. The calves were made to drink the infusion for 2 days once a day through probe after their

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12hour starvation diet (per 2,5ml/kg each time; totally – 5ml/kg). Watering and feeding the calves were restricted and limited during 2 hours after the dehelminthization.

**Table1.** Effect of antihelmint medicinal herbs infusion onto *Neoscaris vitulorum* in the in vitro condition

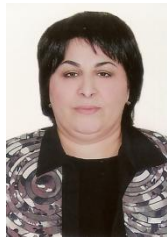
№	Medicinal herbs	Effect duration in hours, minutes				
		Start time of reduction of the helminthes	Stop of the helminthes motion and time of start of their destruction	Amount of destructed helminthes (30 pieces in each cups)		Time of all neoscarides destruction
1	<i>Artemisia absinthium</i>	3hours 30 min.	5hours 10 min.	10	33,3%	6hours 15min.
2	<i>Hypericum perforatum</i>	6hours 10 min.	8hours 10 min.	8	26,6%	9hours 20min.
3	<i>Thymus transcauca-sicus</i>	8hours 10 dəq.	10hours 5 dəq	5	16,6%	14hours 10 dəq
4	Controle: Ordinary water	30hours	35hours	-	-	39hours

To determine treatment advantage of the carried out dehelminthization an observation upon the groups was implemented for 5 days; and exporting process of neoscarides was traced. Exporting of neoscarides was mainly observed in the 1-st and 3-rd days after the dehelminthization; and the solely destructed neoscarides were determined even after the 4-th day. After 10 days since the full stop of the neoscarides exporting excrement samples were individually taken from the calves and examined in the laboratory.

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