

Comparative study in vitro on the efficacy of some plant extract and Levamisole drug against Round worms of chicken natural infected

Nematoda cause is an important parasitic disease in chickens which adversely influences the successful rearing of poultry and leads to severe economic loss due to decrease egg production, reduced weight gain, emaciation and high mortality rate in chickens.

Many anthelmintics are known to be effective against Nematoda infection in chickens, Among them **Levamisole** are most common. **Levamisole** is a sparingly Soluble salt which leads to low degree of absorption and does not exhibit the toxic properties of other soluble anthelmintics. Other various synthetic anthelmintics are available at present which are preciously effective and are commonly employed with variable results However, these drugs have toxic and side effects which may lead to many troubles like the development of resistance and biological imbalance.

Considering these points, it is necessary to find out cheap, effective, readily available and non-toxic or less toxic drugs.

Thus the need to study the therapeutic values of traditional plants for the treatment and control of helminth infection in animals has increased in importance.

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The present study was planned to evaluate the anthelmintic efficacies of two indigenous plants *Artemisia absinthium* and *Lepidium sativium* in comparison with the reference anthelmintic **Levamisole drug**. This study was carried out on Nematodes (*Ascaridia galli*, *Subulura brumpti*) to study the anthelmintic activities of **Levamisole** and different used plant (*Artemisia absinthium* and *Lepidium sativium*) to determine their therapeutic drugs in the treatment of *Ascaridia galli*, *Subulura brumpti*.

We have been studying the impact of the activity counter for the following **Levamisole drug**, Aqueous solution of dried *Artemisia absinthium* leaves and powder suspension seeds of *Lepidium sativium* dried on nematodes (*Ascaridia galli*, *Subulura brumpti*) outside the body of the host (in vitro) on this experiment we extract live, adult worms active, which almost have the same size from the intestines of naturally infected chicken. This worm was washed several times with normal saline solution (solution of physiological 0.9%) then we placed every ten worms on a Petri dish and we divided it to four groups of worms the worms were treated by different concentrations for each subject is 25% - 50% - 75% - 95% of the **Levamisole drug**, Aqueous solution of dried *Artemisia absinthium* leaves and powder suspension seeds of *Lepidium sativium* dried, and left at room temperature 37°C with the observation for the worm activity when they are stopping their movement (anesthesia) or paralysis and death we record the time after we being sure by the worm movement with one of this two ways which is either mechanically or by changing room temperature to 40°C.

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The results indicated that different concentrations of **Levamisole drug**, Aqueous solution of dried *Artemisia absinthium* leaves and powder suspension seeds of *Lepidium sativium* dried effective against the worms in vitro.

An influence has been indicated by stopping the movement or paralysis after a period of exposure to these concentrations, and the death of worms, the time taken for paralysis and death is negatively correlated to concentration.

In vitro it is clear from our results that Aqueous solution of dried *Artemisia absinthium* leaves is the most effective against the *Ascaridia galli* and *Subulura brumpti* at all tested concentrations in terms of paralysis or death followed by **Levamisole**, where there is no significant difference between periods of time to cause paralysis nor death to corresponding concentrations. While a powder suspension seeds of *Lepidium Sativium* dried takes more long time to show its effect on paralysis or death at all corresponding concentrations compared to Aqueous solution of dried *Artemisia absinthium* leaves and **Levamisole**. Also we have been using both the **Levamisole drug** and Aqueous solution of dried *Artemisia absinthium* leaves and powder suspension seeds of *Lepidium sativium* dried to study their effect on Nematelminthes (*Ascaridia galli*, *Subulura brumpti*) and histological changing on Tegment (cuticle) after being treated with the dose 95% concentration from these medication and extraction plant.

Histological Examinations of the cuticle sectors (CUT) in *Ascaridia galli* worm treated with **Levamisole** drug 95% concentration showed curving of the cuticle layer and indentation in the region of lateral line as well as decay in the interstitial layer and the epidermis.

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The muscular layer was affected severely as most of its components were decayed (Contractible & non- Contractible parts, and cytoplasm tags). In other parts of the muscular layer there were sticky layers forming cellular compact.

On examination of the histological sectors of *Ascaridia galli* treated with Aqueous solution of dried *Artemisia absinthium* leaves at 95% concentration, there were positive effective effects of this plant in doing histological great changes represented in decay of the cuticle five layers and separation of them from each other. In addition, the epidermis layer was separated completely from the muscular layer.

The muscular layer appeared decayed in most parts. In other parts, the components were separated and parted forming cellular compact.

The examination of the histological cuticle sectors of *Ascaridia galli* treated with powder suspension seeds of *Lepidium Sativium* dried at 95% concentration showed curving of the cuticle layer and indentation in the region of back line. In addition, the epidermis layer was separated from the muscular layer. The muscular layer appeared inflated in several regions while separated and joined each other in other regions.

When examining the cuticle sectors of *Subulura brumpti* treated with **Levamisole** drug at 95% concentration, it showed curving of the cuticle layer cuticle layer in specific areas and decay in others. The examination also showed decay of the muscular layer in most of its parts.

The histological examinations of the cuticle sectors of *Subulura brumpti* treated with Aqueous solution of dried *Artemisia absinthium* leaves at 95% concentration showed curving of the cuticle layer and appearance of bumps on this layer in other

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areas as well as decay of the muscular layer and adhesion of some of its components and partition of some and separation from the cuticle.

The histological examinations of the cuticle sectors of *Subulura brumpti* treated with powder suspension seeds of *Lepidium Sativium* dried at 95% concentration showed less effect than the effect of *Artemisia absinthium* at the same concentration as the cuticle layer appeared decayed in some areas as well as the partition of the muscular layer in some of its components.