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Herbs as an Alternative to Chemical Anthelmintics in Livestock

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ABSTRACT

Parasitic infestation in livestock is a major problem for farmers. These parasites inflict huge losses in terms of production loss and animal mortality. Hence, chemical anthelmintics have been routinely used for the control of these parasites. But, due to the emergence of anthelmintic resistance in the parasites, alternatives are being investigated. Among these, botanicals are a promising choice that are not only environmentally friendly but also have no reported resistance against them so far. Thus, botanicals need to be further researched upon for the full exploitation of these novel alternatives.

Keywords: Parasites, Livestock, Anthelmintics, Resistance, Botanicals

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Introduction

Livestock is the backbone of the agriculture sector of any country. No country can prosper without the development of its livestock sector. Livestock includes the domesticated animals kept for different purposes in an agricultural system. Livestock is the source of many human use products including food to daily use things. We get milk, meat, wool, leather and many more things from the livestock. However, there are some helminths that pose major hinderance to the growth of livestock sector. They suck blood causing anemia, decrease the feed consumption, damage the skin thus resulting in lowered food production and deteriorated leather quality. So, for improvement and elevation of livestock sector, the control of these helminths is very important [1]. Anthelmintics are the medicines that are used for the control of these helminths. However, owing to their extensive and unjustified usage, some serious issues have emerged that are of major concern these days. These issues include anthelmintic resistance and drug residues in food products [2]. Moreover, these anthelmintics are also expensive to use. So, researchers are trying to find new alternatives for controlling helminths in livestock. Herbs and herbal products are currently under investigation for their anthelmintic effect. So far, these herbs and herbal products have given satisfactory results. These are not only cheaper but also have no resistance issues and the most important thing is that these herbs and herbal products will have bright scope in future as the world is shifting to organic farming and botanical compounds can be used as better alternative therapies [3]. Some of the plants and herbs with known anthelmintic effects are discussed below:

Fennel

It is commonly known as “Soonf” and possesses numerous medical properties. It is reported to be antimicrobial against bacteria. It is also reported to be antifungal. It finds use in colic, tympany, cough, CNS improvement, eyesight improvement, alleviation of anxiety and many other problems. It is reported to be effective against *Schistosoma mansoni*.

Cumin

Cumin commonly known as “Kalonji” is of great medicinal value. It possesses antioxidant, anti-fungal, anti-bacterial and anti-nociceptive properties. It boosts the immune system in various diseases. In research, cumin seeds powder was revealed to have an anti-cestodal effect [4].

Garden Cress

It is scientifically known as *Lepidium sativum*. It has many known advantages. It is known to be effective against many nematodes including *Ascaris*, *Heterakis* and *Subulura*. It stops the movement of the parasites, causes paralysis and leads to death of parasites. It also causes physical damage to the parasites by rupturing the cuticle of these parasites.

Mint

Mint, known as *Mentha pipertia* has many advantages with special uses in GIT problems. It has anti-bacterial activity against both the Gram-negative and Gram-positive bacteria. It has known anthelmintic activity against *Pheritima posthuma*. It is also effective against *Echinococcus granulosus* and acts as a protoscolicidal agent [5].

Chinese Honeysuckle

Its scientific name is *Lonicera japonicum*. This herb is tested to have anthelmintic efficacy against *Dactylogyrus intermedius* which is a platyhelminth. It has anti-bacterial and anti-fungal properties. It also possesses anti-inflammatory properties [6].

Chebulic Myrobalan

Terminalia chebula commonly known as chebulic myrobalan is a plant of great medicinal value. It has anthelmintic effect against *Haemonchus contortus*. Additionally, it also has anti-bacterial, anti-viral, anti-fungal, antioxidant, anti-protozoal and many other medicinally important properties.

Linseed

Commonly known as “Alsi”, linseed has many advantages. It is a source of omega-3 fatty acids and promotes overall health of the animals. It has long been used in equines for various purposes. In strongyloidosis, linseed oil is given in horses [7, 8].

Bitter Apple

Citrullus colocynthis is commonly known as bitter apple. It has a long traditional medical usage history. It is used as an anthelmintic against helminthosis in ruminants. It also possesses other pharmacological properties like anti-inflammatory, anti-fungal, anti-bacterial, analgesic and antioxidant [9, 10].

Harmel

Peganum harmala is a medicinally important herb that has many known properties. It has analgesic and anti-spasmodic properties in man and animals. It is used for colic treatment in man and animals. It is reported to have anti-cestodal properties against gastro-intestinal cestodes of goats. It is also effective against lice infestations [11, 12].

Conclusion

To conclude we can say that parasitic infestation needs to be effectively handled in the face of emerging anthelmintic resistance. For this purpose, botanicals may prove to be a reliable choice provided if we could explore the best ways to take advantage of the potential of these botanicals to their full.

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