

Ethnoveterinary use of various medicinal plants against colic in horses

Aneel Shahzad¹, Talha Talib², Ali Raza³, Arsam Ali⁴ and Hasnain Idrees⁵

1. Livestock and Dairy Development Department Govt of Punjab, Pakistan
2. Department of Clinical Sciences University of Veterinary and Animal Sciences Lahore, Jhang Campus, Punjab, Pakistan
3. The Islamia University of Bahawalpur, Pakistan
4. Camel Breeding and Research Station, Livestock and Dairy Development Department Punjab Pakistan
5. Lahore Polo Club, Lahore, Pakistan

*Corresponding Author: vet.hasnain.idrees@gmail.com

ABSTRACT

There is a growing interest in both human and veterinary medicine in discovering novel natural compounds, primarily derived from herbs, that enhance biological function and promote overall health. The purpose of this article is to elaborate on how some herbal remedies for sport horses' GIT problems are used. Given the availability of novel oral medications, targeted supplements, and health-promoting compounds, herbs are regarded as an extremely valuable resource. The primary benefits of herbal products have been covered, including strengthening the immune system, enhancing performance, enhancing antioxidant status, reducing overall stress, and acting as efficient laxatives in the treatment of GIT problems like colic. We have specifically examined the label claims, potential side effects, and doping interactions of a few popular herbal extracts. Herbal medications have been much more widely available in both human and veterinary care in recent years, especially in the equine industry

Keywords: Colic, Conventional drugs, Alternatives, Medicinal plants, Horses

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Introduction

Gastrointestinal diseases can arise from a variety of pathogenic pathways, including aberrant GI motility and compromised GI mucosa barrier, which can manifest clinically as symptoms of indigestion, constipation, and stomach pain [1]. The regurgitation of lower GIT contents into the upper GIT is known as reflux. Disrupted motility has been linked to functional dyspepsia and colic.

Colic is associated with different GIT disorders like functional dyspepsia, ulcerative colitis, and gastroesophageal reflux disease (GERD) has been validated by reports from multiple research projects [2]. Additionally, several muscles along the gastrointestinal tract (GIT) may serve as gates or checkpoints. These muscles include the anus, ileocecal valve, pylorus, proventriculus, aperture of the vermiform appendix, and orbicular isoris muscle. Each of these checkpoints is secured with a sphincter or smooth muscle that acts as a barrier to prevent lower abdominal contents from causing the opening and effacement of the checkpoint. If the checkpoint fails, lower gut juice reflux to the upper gastrointestinal tract occurs [3].

Signs and Symptoms of Colic

Horses are most commonly affected by colic amongst domesticated creatures, and diseases presenting with colic (abdominal discomfort) are some of the most frequent causes of premature mortality in horses. The gastrointestinal tract (GIT) is the main source of colic, while pain can also occasionally affect other organs within the abdominal cavity. The main risk factors for equine colic include GIT anatomic anomalies, poor digestive function (due to dietary or intrinsic deficits), and inadequate owner administration [4].

There are two types of colic: real or true colic, which is caused by digestive system disorders, and pseudo-colic, which is brought on by other abdominal organs. Flatulence, stomach distension, colon impaction, and catarrhal enteralgia are often the causes of true colic. The onset of symptoms might be sudden, and they can cause odd behavior in addition to performance impairment. On the other hand, urolithiasis, liver illness, uterine twisting, and failure of the kidneys, might cause pseudo-colic. Depending on the reason and effectiveness of the treatment, severity might vary from mild to severe. Regardless of the cause, bulimia nervosa, restlessness, profuse perspiration, agitation, staring at the abdomen, hitting, or biting the belly, rolling in the pasture, raking the legs, and twirling are common symptoms of colic [5, 6].

Ethnoveterinary practice

Since ancient times, conventional drugs have been utilized to treat a variety of illnesses. Different plant parts are frequently utilized to cure different kinds of ailments. It has been determined that using natural remedies or traditional medicines can be an affordable way to treat a variety of illnesses. It has been demonstrated that many therapeutic herbs have fewer negative effects than synthetic medications [7].

When compared to manufactured medications, these natural medicinal substances are more affordable and have less harmful effects. Researchers are focusing on botanicals with antispasmodic properties since horses with colic suffer from a spasmodic state. *Ephedra*, *Datura stramonium*, *Solanum dulcamara*, *Atropa belladonna*, *Grindelia camporum*, *Hyssopus officinalis*, *Thymus vulgaris*, *Glycyrrhiza glabra*, *Lobelia inflata*, *Marrubium vulgare*, *Euphorbia hirta*, *Coleus forskohlii*, and *Inula* are typical examples of medicinal plants that could be applied as antispasmodic agents against various GIT disorders like constipation, colic, etc. An efficient anti-inflammatory and antispasmodic chamomile is a traditional medication used to treat menstruation discomfort and intestinal issues [8]. Currently, spasmolytic chemicals are utilized to treat mental stress, musculoskeletal tension, anxiety, and irritability. Research has indicated that the antispasmodic activity of species in the Lamiaceae and Asteraceae families is attributed to their high number of isolated spasmolytic components. Antispasmodic herbs work in a variety of ways, including activating potassium ATP channels to inhibit neurotransmitters like acetylcholine, serotonin, or 5-hydroxytryptamine, lowering extracellular calcium, blocking muscarine receptors, sodium channels, calcium channels, and vanilloid receptor participation [9]. This is how the spasmolytic effect of natural compounds is produced. Various experimental models, such as living creatures or their organs, are utilized to examine the antispasmodic properties of herbal medications. The animal's organ is removed, and a natural medication or natural substance is injected to assess the organ's function or intestinal motility [10]. Medicinal herbs are used to treat and control a variety of human bodily systems, with many different indications. Furthermore, these herbal cures are important sources of different chemical components that may develop into novel therapeutic options. Numerous medicinal plants are used to treat various ailments of the gastrointestinal tract. In the colic of horses, there is also a treatment of laxatives that are given in fluid form to reduce constipation and abdominal discomfort but on the other hand, some studies have shown medicinal plants have laxative properties which are discussed in the next section.

Medicinal plants used as laxatives in colic

Laxatives are substances that make stools easier to pass and more frequent by filling the intestines with more material, keeping water in the colon by promoting motility or boosting intestinal secretion. Numerous kinds of laxative agents are employed, such as bulking, lubricating, osmotic, and stimulating agents. Horses with bowel idiopathy diseases such as constipation and colic have dry, hard stools that are difficult to evacuate due to their numerous identified disease processes [11]. Colic conditions can be brought on by several medical conditions, including metabolic disorders, anorexia, fiber shortage, and some medications. Patients with diabetes may experience constipation for unexplained reasons, or it may result from

autonomic dysfunction caused by an imbalance between the sphincter and the gut muscles.

Since ancient times, laxatives such as senna leaf powder, triphala, and isabgol husk have been used to relieve constipation. Compared to semi-synthetic or manufactured medicines, plants are more readily available, cost less, and have fewer adverse effects when used as laxatives. In Asian nations, the rhizome of an *Amorphophallus* species with a high concentration of glucomannan polysaccharides is frequently used as a bulk laxative, whereas dried fruits of *Ocimum americanum*, *Scaphism scaphingerum*, banana, and papaya contain pectin and mucilage, respectively [12].

Chemicals with Laxative Effect

Chemicals, both synthetic and natural, are essential to the production of laxatives. Natural substances with excellent laxative properties include bentonite, cellulose ethulose, lactulose, and mannitol; semi-synthetic and synthetic substances with excellent laxative properties include carboxymethylcellulose, glycerin, liquid paraffin, sorbitol, and so on [13]. Synthetic laxatives, such as bisacodyl, bisoxatin, dantron, pentaerythritol, sodium and magnesium hydroxide, and picosulfate, are commonly utilized [14].

Conclusion

In both industrialized and developing nations, there is a growing tendency to favor medicinal plants. Natural materials found in herbs are used in herbal medications, and we understand that many pharmaceuticals contain these same substances in a more refined form. Herbal medications can be quite effective in healing several serious diseases, even though they do have certain harmful consequences. But unlike allopathic medications, no reliable information on their application, effectiveness, toxicity, or adverse effects is accessible. When a new pharmaceutical product enters the market, a lot of information is released to the general audience. Comparably, popular herbal products ought to be thoroughly investigated, and tested, and

the public should have access to extensive information regarding their pharmacological features. Because of the widespread misconception that herbal medicines have negligible to no negative effects, many people use them without doing adequate research or consulting a doctor. This could have extremely harmful repercussions.

References

- [1] Newman KL, Kamada N. Pathogenic associations between oral and gastrointestinal diseases. *Trends in molecular medicine*. 2022 Dec 1;28(12):1030-9.
- [2] Mai T, Fatheree NY, Gleason W, Liu Y, Rhoads JM. Infantile colic: new insights into an old problem. *Gastroenterology Clinics*. 2018 Dec 1;47(4):829-44.
- [3] Mair TS, Hillyer MH. Chronic colic in the mature horse: a retrospective review of 106 cases. *Equine veterinary journal*. 1997 Nov;29(6):415-20.
- [4] Bland SD. Equine colic: a review of the equine hindgut and colic. *Veterinary Science Development*. 2016 Aug 9;6(1).
- [5] Hackett ES. Specific causes of colic. *Practical guide to equine colic*. 2013 Sep 11:204-29.
- [6] Wheat JD. Causes of colic and types requiring surgical intervention. *Journal of the South African Veterinary Association*. 1975 Mar 1;46(1):95-8.
- [7] MUNIR F, SHAKOOR A, SINDHU Z, SALMAN M, SHAREEF M, ARIF MA, SHAFIQ MS, KHAN AM. Therapeutic Potential of Garlic (*Allium sativum*) in Ruminants.
- [8] Rauf, A., Akram, M., Semwal, P., Mujawah, A. A., Muhammad, N., Riaz, Z., ... & Khan, H. (2021). Antispasmodic potential of medicinal plants: a comprehensive review. *Oxidative medicine and cellular longevity*, 2021(1), 4889719.
- [9] Asghar MU, Siddique MH, Qureshi MA, Abdul M. Homeopathic Medicines used to Treat Various Internal, Muscular, Joint and Skin Diseases in Equines. 2024. *Complementary and Alternative Medicine: Botanicals/Homeopathy/Herbal Medicine*. Unique Scientific Publishers, Faisalabad, Pakistan, pp: 320-325.
- [10] Ghodake PP, Kulkarni AS, Aloorkar NH, Osmani RA, Bhosale RR, Harkare BR, Kale BB. In-vitro antispasmodic activity analysis of methanolic leaves extract of *Lantana camara* Linn. on Excised Rat Ileum. *Journal of Pharmacognosy and Phytochemistry*. 2013;2(3):66-71.
- [11] Masoomi F, Feyzabadi Z, Hamed S, Jokar A, Sadeghpour O, Toliyat T, Fakheri H. Constipation and laxative herbs in Iranian traditional medicine.
- [12] McQuinn S. *Horse Owner's Guide to Toxic Plants: Identifications, Symptoms, and Treatments*. Simon and Schuster; 2020 Jun 23.
- [13] Chandrasekar R, Chandrasekar S. Laxative a herbal remedy for relieving constipation. *World Journal of Pharmacy and Pharmaceutical Sciences*. 2016 Sep 2;5(11):2278-4357.
- [14] Accame MC, Cuadrado MG, Ortega MT. Medicinal plants used in folk medicine for digestive diseases in central Spain. In *Ethnomedicinal Plants—Revitalizing of Traditional Knowledge of Herbs* 2011 Feb 1 (pp. 361-387).