Abstract

Essential oil have been used for ages in religious ceremonies for offering Gods, as perfume, in food flavoring, as preservative substances and used ancient medicines. In modern days these essential oils are roots for pharmaceutical industries, main ingredients in food industry as a flavor, main sources for agarbatti industries, core materials in cosmetic industries, used in preparation of aromatic candles and they act as plant protecting agents in organic farming. Apart from these industries essential oils commercially used in veterinary industry. In veterinary industry these oils used as medicine, as nutrition as feed additives and to maintain the hygienity in animals. Essential oils mainly used in aromatherapy, the word aromatherapy was found by Rene mourice guttefoss during 1st world war. He accidently invented healing property of lavender oil and before using these oils on human beings, he tested on dogs and horses. This is first reference were the essential oils used in animals.

Introduction

Essential oils are chemical compounds which are odoriferous and highly volatile in nature and they insoluble in water soluble in organic solvents. These are the aromatic oily liquids present in aromatic crops and extracted from different parts like leaves, bark, stem, roots, flowers, seeds, etc. Essential oils (EOs) are secondary metabolites of plants employed in folk medicine for a long time thanks to their multiple properties. In the last years, their use has been introduced in veterinary medicine, too. The study of the antibacterial properties of EOs is of increasing interest, because therapies with alternative drugs are welcome to combat infections caused by antibiotic-resistant strains. Other issues could be resolved by EOs employment, such as the presence of antibiotic residues in food of animal origin and in environment. Humans have long enjoyed the powerful healing properties of essential oils – and now, pets can benefit from them too. When used appropriately, such oils can alleviate countless health issues in our furry friends – anxiety, insomnia and skin irritation, to name a few. But exercising safety is key here.

Essential oils should be used with extra caution. They are quickly absorbed through the skin and after being ingested. Consult your veterinarian before using any essential oils on or around your pets. Highly concentrated oils should never be used on pets

Application of essential oils in veterinary industry:-

- As nutrition
- As medicine
- Used as feed additives
- To avoid parasites
- For preservation of meat and milk

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In dairy industry
In aromatherapy of animal
In wild life science and
In preparation of animal cosmetics.

**Essential oils as medicine in animals**
Essential oils are grouped into different categories according to veterinary material media:-

- **Carminative group:** Cardamom, Ginger, Asafoitida
- **Expectorant:** Anise, Camphor, Basil.
- **Diuretics and urinary antiseptics:** Cubeb, Copaiba, Sandalwood oil.
- **Vermicides and parasiticides:** Ajowan, Chenopodium, Thymol
- **Counter irritants:** Eucalyptus, Turpentine, Cajuput, etc.

**Development of antibiotic resistance:**
Irrational use of antibiotics in feed additives of animals in poultry, in dairy cows and in pigs will kill most of the bacteria's present in microbial gut but the resistance bacteria will survive and multiply in guts of these animals. The survived bacteria will become resistance for all the antibiotics known as super bug. These resistance bacteria will spread through the animal produce by contaminated water and soil, by contaminated surface, through the animals fecal matter or by manure and through the contaminated food and environment. Spread of resistance bacteria shows major impact on human health like:

- Increased human morbidity.
- Increased human mortality.
- Reduces efficacy of related antibiotics used in humans.
- Increased human health care costs.
- Increased potential for carriage and dissemination.
- Facilitated emergence of resistance in human pathogens.

**Phyto genius:** Herbs and plant used in animal food called phyto gezins.

- It improves the gut micro flora
- Increase the digestibility
- Modify the digestive secretion morphology
- Reduce the microbial toxins

Essential oil in dairy cows:-
In dairy industry essential oils are commercially used because of their benefits viz, for

- Stimulate of rumen fermentations.
- Inhibition of methanogenesis.
- EO modify the ruminal volatile fatty acids and nitrogen metabolism.
- EO interact with microbial cell membranes.
- To increase amount and quality of amino acids available for milk production

**Aromatherapy in animals:**
- Aromatherapy is effective in treating a number of animals health problems, such as skin irritations, ear infections, hyperactivity, flea/tick infestations, and much more.
- Aromatherapy for animals refers to the therapeutic use of 100% pure essential oils and hydrosols for holistic treatments of physical and behavioural problems in animals.

**Hydrosol**
- is a water-based substance which is a by-product obtained during the steam distillation process of an essential oil. A hydrosol contains water-soluble parts of a plant as well as very small amount of some essential oil components.
- For extremely sensitive dogs, small dogs and for cats hydrosols are good alternative.

Some of the essential oil used for the aromatherapy for animals: Bergamot, carrot seed, cederwood, german chamomile, roman chamomile, clary sage, eucalyptus, geranium, ginger, helichrysum, sweet marjoram, lavender, pepper mint, sweet orange.

**Using essential oils**
Pets are renowned for their heightened sense of smell, hence the need for extra caution when using essential oils. Bottom line: always dilute aromatic essences; never use them neat (undiluted). Aim for one drop of the essence in 50 drops of carrier oil (Grapeseed oil works a treat). When diffusing oils, try to provide an 'escape route' for your pets – an open window or door, for instance. Don't always assume pets will respond to your choice of essential oils in the same way you do. You could love the floral scent of Rose Geranium wafting through your house, but your cat may run a mile. If your furry friend doesn't like a particular essence, don't enforce its use. Cats are especially sensitive, so diffuse them sparingly and keep a watchful eye on your feline's behaviour. Finally, any
topical use of essential oils should only ever be used on dogs – not cats, due to their sensitive metabolic system. Spot treatment on canines needs to be handled with the utmost care and consideration, as we would with a child.

CONCLUSION
Use of essential oil is gaining momentum as an alternative to antibiotics in animal nutrition for overall excellence of animals. They act as immunity enhancers and fight bacterial, fungal and viral infections hence, there is a vast scope for growing aromatic crops and using essential oils commercially in veterinary industry apart from perfumery, cosmetic and pharmaceutical industry. Thou this essential oil have positive effects. But the knowledge of their use in animal nutrition is still limited and require further research to clarify its mode of action as well as the exact supplementation level.

REFERENCE

<table>
<thead>
<tr>
<th>Essential oil</th>
<th>Name</th>
<th>Active components</th>
<th>Susceptible microorganisms</th>
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<tbody>
<tr>
<td>Allium sativum</td>
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<td>Enteropathogenic bacteria</td>
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<td>Dill</td>
<td>Limonene, carvone</td>
<td>Gram-positive and negative bacteria</td>
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<td>Paprika</td>
<td>Capsaicin</td>
<td>Gram-positive and negative bacteria</td>
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<td>Cinnamomum cassia</td>
<td>Cassia</td>
<td>Cinnamaldehyde</td>
<td>Escherichia coli, Staphylococcus aureus, Listeria monocytogenes, Salmonella enteritidis</td>
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<td>Juniper</td>
<td>Cadinene, pinene</td>
<td>Aeromonas sobria, Enterococcus fecalis, Staphylococcus aureus</td>
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<td>Tea tree</td>
<td>Terpinen-4-ol</td>
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<td>Oregano</td>
<td>Carvacrol, thymol</td>
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<td>Anethol</td>
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