

liter bottles 12 to a case

Dinabreathe Liquid Immune Stimulator, Decongestant and Growth Promoter

DINATEC TECHNICAL SERVICES DEPARTMENT PUBLICATION

Factors for Development of Respiratory Disease

Animal: Age, species and genetics impact whether the animal will be sensitive or resistant to pathogens.

Environment: Temperature, dust, gases and ventilation impact the occurrence of respiratory irritations. Rats, insects and birds can bring in pathogens; stress also reduces immunity.

Pathogen: Disease can be caused by bacteria (E. Coli), viruses (pneumovirus) and fungi (Aspergilosis). Mycoplasma is responsible for a different kind of infection. Seldom is a respiratory disease associated with only one pathogen.

Housing Density: More intensive production is responsible for the increase in respiratory problems

Ammonia: Ammonia and ammonia solutions are irritants and

corrosive, and are harmful by all routes of exposure. Acute oral exposure rapidly results in pain, excessive salivation and burns to the mouth, throat and esophagus. Acute inhalation may initially cause



upper respiratory tract irritation. Substantial exposure can cause burns in the oral cavity, nasopharynx, larynx and trachea, together with airway obstruction, respiratory distress and bronchiolar and alveolar oedema.

POULTRY FACT: 50-80% OF BLOOD IN THE AVIAN LUNG IS IN CONTACT WITH GAS EXCHANGE MEMBRANES, COMPARED TO 20% IN MAMMALS.

Essential Oils: Proven Results Worldwide

WHAT IS AN ESSENTIAL OILS ANY OF A CLASS OF **VOLATILE OILS OBTAINED FROM** PLANTS POSSESSING THE ODOR AND OTHER CHARACTERISTIC PROP-ERTIES OF THE PLANT, USED CHIEFLY IN THE MANUFACTURE OF PER-FUMES, FLAVORS AND PHARMACEUTICALS (EXTRACTS AFTER HYDRO-DISTILLATION).

It is well known that many diseases with immune-modulated components can be modified by administration of biological compounds which activate key pathways in the immune system.

Plant extracts can continuously be used in rations without any need for their removal ,and they do not induce any resistance to antibiotics.²

They strengthen the defense and immune mechanisms and can be used for stimulating the non-specific immune responsiveness in both the human and veterinary medical practice

Recently, the clinical use of essential oils has expanded worldwide, including treatment of various kinds of disease conditions such as allergy, asthma, rheumatism and arthritis

The antibacterial effects of

eucalyptus leaf extract on pathogenic bacteria isolated from patients with respiratory problem have also been documented.

Similarly, Ocak⁵ found a high growth promoting efficacy in peppermint leaves.

Barbour⁷ evaluated the impact of eucalyptus and peppermint essential oils in the protection of the respiratory system of broilers against controlled challenges by Mycoplasma Gallisepticum and/or avian influenza virus H9N2.

It was concluded that eucalyptus and peppermint oils proved to be able to implement innate-cell mediated, humoral immune response and have a potent immunomodulatory effect in chickens.

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¹ Awaad MHH, GA Abdel-Alim, KSS Sayed, Kawkab, A Ahmed, AA Nada, ASZ Metwalli and AN Alkhalaf, 2010. Immunostimulant effects of essential oils of peppermint and eucalyptus in chickens. Pak Vet J, 30(2): 61-66.

² Gill, C., 1999. Herbs and plant extracts as growth enhancers. Feed. Int., 20: 20-23. Leonard B, 2004. Complementary and alternative interventions in asthma, allergy and immunology. Ann Allergy, Asthma, Immun., 93: S45-\$54

⁴Page, L, 2004. Healthy Healing: A guide to selfhealing for everyone. 12th Ed, Book World Services, Sarasota, Florida, USA, pp: 42-44. ⁵ Salari MH, G Amine and MH Shirazi, 2006. Antibacterial effects of eucalyptus globules leaf extract on

pathoaenic bacteria isolated from specimens of patients with respiratory tract disorders. Clin Microbiol Infect, 12: 194-196.

⁶ Ocak C, G Erener, AKF Burak, M Sungu, A Altop and A Ozmen, 2008. Performance of broilers fed diets supplemented with dry peppermint (Mentha piperita L) or thyme (Thymus vulgaris L) leaves as growth promoter source. Czech J Anim Sci, 53: 169-175.

⁷ Barbour EK, 2006. Evaluation of histopathology of the respiratory system in essential oiltreated broilers following a challenge with Mycoplasma gallisepticum and/or H9N2 influenza virus, Beirut, Lebanon. Intern J Appl Res Vet Med, 4: 293-300.

Eucalyptus Efficacy Against Respiratory Infection

Eucalyptus oil (EO) and its major component. 1.8cineole, (Figure 1), have antimicrobial effects against many bacteria, including

Mycobacterium tuberculosis

and methicillinresistant Staphylococcus aureus (MRSA), viruses, and fungi (including Candida).



Figure 1: 1,8-cineole: the

major component of most

Surprisingly for an antimicrobial substance, there Eucalyptus Oil species. are also immune -stimulatory, anti-

inflammatory, antioxidant, analgesic, and spasmolytic effects.

Of the white blood cells, monocytes and macrophages are most affected. especially with increased phagocytic activity.

Application by either vapor inhalation or

oral route provides benefit for both purulent and nonpurulent respiratory problems.

There is a long history of usage with a good safety record.

> More recently, the biochemi-

cal details behind these effects have been clarified. The safety of moderate doses of EO and its broad-spectrum antimi-

crobial action make it an attractive alternative to pharmaceuticals. Alt Med Review, 2010; 15 (1):33-47).

Eucalyptus oil has antibacterial, antiviral, and antifungal components, and a long history of use against the effects of respiratory infections.⁸

⁸Juergens UR, Engelen T, Racke K, et al. Inhibitory activity of 1,8-cineol (eucalyptol) on cytokine production in cultured human lymphocytes and onocytes. Pulm Pharmacol Ther 2004;17:281-287.

on body weight or egg pro-

⁹ Gangopadhyay A, Ganguli S, Datta A (2011) Inhibiting H5N1 hemagglutinin with samll molecule

10 Barbour EK, Saadé MF, Abdel Nour AM, Kayali G. Kidess S. Bou Ghannam R. Harakeh S. Shaib H

(2011) Evaluation of essential oils in the treatmen

of broilers co-infected with multiple respiratory

Research in Veterinary Medicine 9:317-323

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11 Garozzo A, Timpanaro R, Bisignano B, Furneri PM, Bisignano G, Castro A (2009) In vitro antiviral

12 Hudson JB (2009) The use of herbal extracts in

the control of influenza. Journal of Medicinal Plants

13 Krawitz C, Mraheil MA, Stein M, Imirzalioglu C, Domann E, Pleschka S, Hain T (2011). Inhibitory

activity of a standardized elderberry liquid extract

¹⁴ Sood R, Swarup D, Bhatia S, Kulkarni DD, Dey S, Saini M, Dubey SC (2012) Antiviral activity of

crude extracts of Eugenia jambolana Lam. against

highly pathogenic avian influenza (H5N1) virus. Indian journal of experimental biology 50:179-

Animal Health Research Institute, Egypt), "A view and overview on the control of avian influenza

outbreaks in poultry: The use of herbal antivirals and probiotics," 2014. 🛷

against clinically-relevant human respiratory bacterial pathogens and influenza A and B viruses

BMC complementary and alternative medicine

ligands. International Journal of Bioinformatics

duction have been de-

scribed.15

Research 3:185-189.

Research 3:1189-1195.

Eucalyptus Oil Benefits:

- DECREASES AIRWAY MUCIN SECRETION OF TRACHEAL AND **BRONCHIOLE EPITHE-**LIUM
- **ANTIBACTERIAL**
- AID ON BRONCHI **EXHALATION**
- **ANTIVIRAL**
- **IMPROVE RESPIRA-**TORY HEALTH
- AID ON MUCUS EX-**CRETION FROM SI-**NUS

POULTRY FACT: THE GAS-BLOOD BARRIER IN AVIAN LUNGS IS SIGNIFICANTLY THINNER THAN IN MAMMALIAN LUNGS

Lime oil Benefits:

- **VAPORIZES EASYLY**
- **REDUCE STRESS** •
- **ANTIBACTERIAL**
- **ANTIVIRAL** •
- DECONGESTANT •
- **REDUCES MUCUSAL** RESPONSE

Menthol Benefits:

- VAPORIZES EASYLY
- SOOTHING .
- **ANTIBACTERIAL**
- **STIMULANT**
- EASES BREATHING
- **REDUCES MUCUS INFLAMMATION**

Peppermint Oil (Menthol)

Menthol and eucalyptus probably have inhibitory effect on H5 viruses due to strong interactions ability with the viral HA protein.⁹

Likewise, eucalyptus and peppermint essential oils preparations protected broilers against H9N2 virus infections. 7,10

Many herbs and/or their extracts have direct inhibitory effects on the replication of different AIV subtypes both in-vitro and in-vivo. In addition to its antiviral activity. these extracts often have immunoadjuvant effect, antibacterial, anti-fungal, antiinflammatory, anti-oxidant and/or analgesic properties which may provide alternative natural broad-spectrum therapy for control of AIV in poultry farms.^{11,12,13,14}

¹⁵ Sayed Abd El-Whab (The Federal Research Institute for Animal Health, Friedrich Loeffler Institute – Institute of Molecular Virology and Cell Biology, Germany - National Laboratory for Veterinary Quality Control on Poultry Production,

11:16.

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To date, no adverse effects

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We Deliver Optimum Profitability and Performance

Dinabreath Composition:

Each 1 liter contains:	ç
Eucalyptus oil	4
Menthol oil	4
Lime oil	4
Peppermint oil	4
Polysorbate 80	100
Distilled water up to 1 liter	

Indication: Growth Promoter

Species: Poultry

Dose: 0.5 - 1 ml / liter of drinking water

Packing: Bottle 1 liter-12 to one case



Dinabreath presented in one liter bottles 12 to a case