



DINATEC

Quality You Can Trust

DinaBreathe



MADE IN USA

Dinabreath presented in one liter bottles 12 to a case

Dinabreath 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.

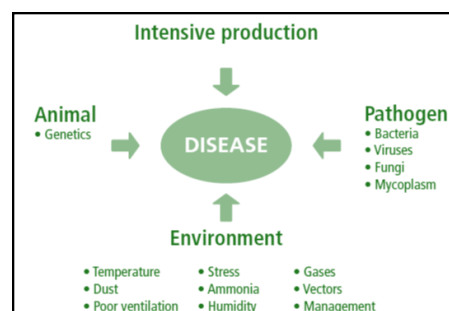
Environment: Temperature, dust, gases and ventilation impact the occurrence of respiratory irritations. Rats, insects and birds can bring in pathogens; stress also reduces immunity.

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 OIL?

ANY OF A CLASS OF VOLATILE OILS OBTAINED FROM PLANTS POSSESSING THE ODOR AND OTHER CHARACTERISTIC PROPERTIES OF THE PLANT, USED CHIEFLY IN THE MANUFACTURE OF PERFUMES, 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.¹

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.^{3,3}

The antibacterial effects of

eucalyptus leaf extract on pathogenic bacteria isolated from patients with respiratory problem have also been documented.⁵

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.

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.

³ Leonard B, 2004. Complementary and alternative interventions in asthma, allergy and immunology. *Ann Allergy, Asthma, Immun.*, 93: S45-S54.

⁴ Page, L, 2004. *Healthy Healing: A guide to self-healing 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 pathogenic 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 oil-treated broilers following a challenge with *Mycoplasma gallisepticum* and/or H9N2 influenza virus, Beirut, Lebanon. *Intern J Appl Res Vet Med*, 4: 293-300.

Eucalyptus Oil Benefits:

- DECREASES AIRWAY MUCIN SECRETION OF TRACHEAL AND BRONCHIOLE EPITHELIUM
- ANTIBACTERIAL
- AID ON BRONCHI EXHALATION
- ANTIVIRAL
- IMPROVE RESPIRATORY HEALTH
- AID ON MUCUS EXCRETION FROM SINUS

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

Eucalyptus Efficacy Against Respiratory Infection

Eucalyptus oil (EO) and its major component, 1,8-cineole, (Figure 1), have antimicrobial effects against many bacteria, including

Mycobacterium tuberculosis and methicillin-resistant Staphylococcus aureus (MRSA), viruses, and fungi (including Candida).

Surprisingly for an antimicrobial substance, there 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 non-purulent respiratory problems.

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

More recently, the biochemical details behind these effects have been clarified. The safety of moderate doses of EO and its broad-spectrum anti-

microbial 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.

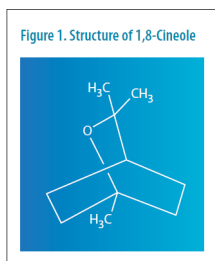


Figure 1: 1,8-cineole: the major component of most Eucalyptus Oil species.

Lime oil Benefits:

- VAPORIZES EASILY
- REDUCE STRESS
- ANTIBACTERIAL
- ANTIVIRAL
- DECONGESTANT
- REDUCES MUCUSAL RESPONSE

Menthol Benefits:

- VAPORIZES EASILY
- 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, anti-inflammatory, 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}

To date, no adverse effects

on body weight or egg production have been described.¹⁵

⁹Gangopadhyay A, Ganguli S, Datta A (2011) Inhibiting H5N1 hemagglutinin with small molecule ligands. *International Journal of Bioinformatics Research* 3:185-189.

¹⁰Barbour EK, Saadé MF, Abdel Nour AM, Kayali G, Kidess S, Bou Ghannam R, Harakeh S, Shaib H (2011) Evaluation of essential oils in the treatment of broilers co-infected with multiple respiratory etiologic agents. *International Journal of Applied Research in Veterinary Medicine* 9:317-323

¹¹Garozzo A, Timpanaro R, Bisignano B, Furneri PM, Bisignano G, Castro A (2009) In vitro antiviral activity of *Melaleuca alternifolia* essential oil. *Letters in applied microbiology* 49:806-808

¹²Hudson JB (2009) The use of herbal extracts in the control of influenza. *Journal of Medicinal Plants Research* 3:1189-1195.

¹³Krawitz C, Mraheil MA, Stein M, Imirzalioglu C, Domann E, Pleschka S, Hain T (2011). Inhibitory activity of a standardized elderberry liquid extract against clinically-relevant human respiratory bacterial pathogens and influenza A and B viruses. *BMC complementary and alternative medicine* 11:16.

¹⁴Saad 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* 50:179-186

¹⁵Sayed 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, 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.

Dinatec Inc., D.B.A. Diversified Nutri-Agri Technologies Inc.,

3292 Thompson Bridge Rd. #208, Gainesville, Georgia 30506
E-Mail: sales@dinatec.com, Web site at <http://www.dinatec.com>;

Phones main switchboard 770-999-9133 ext. 131, Toll Free 1-877-Dinatec (877-346-2832); FAX # 678-608-2770;

We Deliver Optimum Profitability and Performance

Dinabreath Composition:

Each 1 liter contains:	%
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



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