

# PLANT EXTRACTS FOR ANIMAL FEED SOLUTION

> Natural-identical EOs





# FOOD SAFETY

According to the law requirements of Regulation (EC) 1831/2003 and the QS standard by FAMI-QS Certification System. The herbs-based ingredient of plant extracts can be used as feed additives to improve feed function and quality.



## Types of Plant Extracts for Feed

- Alkaloids
- Glucosides
- Organic acids
- Sugar
- **Volatile oil (EOs)**





# EOs FOR LIVESTOCK & POULTRY PRODUCTION

The essential oils (EOs) were prepared by the monomer substance or mixture ingredients of chemical synthesis. Use EOs as feed additives possibly replace the antibiotic growth promoters be fed to swine, poultry, ruminants, and aquaculture.

## Application Guide

- Change the taste and odor of feed materials
- Stimulate the glossopharyngeal nerves of livestock and poultry, increase saliva secretion and improve appetite
- Improve animal resistance
- Improve the delivery rate
- Improve the number of litter
- Improve the animal daily gain
- Improve feed return



# PRODUCT LIST by function

Following list is the chemical ingredients of plant extracts used for feed additives by function. The table are traced based on commercial patents as data sources for reference only.

Application List of Monomer and EOs by Function								
Chemicals Name	Category	Group	Anti-oxidant	Growth Promoter	Flavoring	Feed Anti-corrosion	Deodorization	Coating Material
4-Ethylguaiaicol	MO	Phenol			○			
Camphene	MO	Alkene			○			
Camphor	M	Ketone	○				○	
Carnosic acid	MO	Carboxylic acid	○					
Cedar oil	EO	Oil				○		
Citronella oil	EO	Oil		○				
Dihydromyrcenol	MO	Alcohol			○			
Dipentene	M	Alkene	○		○		○	

Category: MO = monomer (includes isomer) , M = mixture, EO = essential oil. O = crude oil.

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Eugenol	MO	Alcohol		○		○	○	
Limonene	MO	Alkene	○		○		○	
L-Theanine	MO	Carboxylic acid			○			
Methyl Salicylate	MO	Ester						○
Perilla aldehyde	MO	Aldehyde						○
Pine tar	O	Oil				○		
Tea polyphenol	M	Phenol	○				○	
Tea tree oil	EO	Oil	○	○				

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Chemicals Name	Category	Group	Anti-oxidant	Growth Promoter	Flavoring	Feed Anti-corrosion	Deodorization	Coating Material
Terpineol	M	Alcohol	○	○				
Tung oil	O	Oil				○		
Turpentine oil	EO	Oil	○					
Vanillin	MO	Aldehyde			○			
α-Cedrene	MO	Alkene		○	○			
α-phellandrene	MO	Alkene			○			
α-Pinene	MO	Alkene			○			
α-Terpineol	MO	Alcohol		○				

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δ-Decalactone	MO	Lactone			O			
δ-Dodecalactone	MO	Lactone			O		O	

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# MEDICINAL VALUE OF PLANT EXTRACTS IN FEED ADDITIVES

Many plant species have broad-spectrum medicinal effects of antibacterial and anti-inflammatory. That results possibly replace the application of antibiotics on feed manufacturing.

The herb is effective because it was composed of monomers, and the active ingredients have medicinal effective.

In general...

- The effect of natural ingredient is obviously better than the synthetic grade
- The efficacy of same monomers from different species is different
- The broad-spectrum medicinal value of EOs is better than monomers





# PRODUCT LIST by medicinal

Following list is the chemical ingredients of plant extracts used for feed additives by medicinal. The table are traced based on commercial patents as data sources for reference only.

Application List of Monomer and EOs by Medicinal									
Chemicals Name	Category	Group	Bacteriostasis	Anti-inflammatory	Influenza	Anthelmintic	Immunity Regulation	Anti-diarrhea	Respiratory tract Resistance
1,8-Cineole	MO	Alcohol	○						
3-Carene	MO	Alkene					○		
Camphor	M	Ketone	○			○			
Carnosic acid	MO	Carboxylic acid	○						
Carvacrol	MO	Phenol	○						
Cedar oil	EO	Oil	○				○		○
Citronella oil	EO	Oil	○						
Dihydromyrcenol	MO	Alcohol	○						

Category: MO = monomer (includes isomer) , M = mixture, EO = essential oil. O = crude oil.

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Chemicals Name	Category	Group	Bacteriostasis	Anti-inflammatory	Influenza	Anthelmintic	Immunity Regulation	Anti-diarrhea	Respiratory tract Resistance
Dipentene	M	Alkene	○						
Limonene	MO	Alkene	○						
Longifolene	MO	Alkene	○				○	○	
L-Theanine	MO	Carboxylic acid				○	○		
Myrcene	MO	Alkene	○	○			○	○	
p-Cymene	MO	Arene	○						
Perilla aldehyde	MO	Aldehyde			○		○		
Pine tar	○	Oil						○	

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Sabinene	MO	Alkene	○						
Tea polyphenol	M	Phenol					○	○	
Tea tree oil	EO	Oil	○		○		○		
Terpinen-4-ol	EO	Alcohol	○			○	○		
Terpineol	M	Alcohol	○						
Tung oil	O	Oil				○			
Turpentine oil	EO	Oil		○			○		
α-Cedrene	MO	Alkene					○		

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α-Pinene	MO	Alkene	○				○	○	○
α-Terpinene	MO	Alkene	○			○	○		
α-Terpineol	MO	Alcohol				○			
β-Pinene	MO	Alkene	○				○	○	
γ-Phellandrene	MO	Alkene	○						

Category: MO = monomer (includes isomer) , M = mixture, EO = essential oil. O = crude oil.

More Details...

- [Products List](#)
  - [Turpentine Derivatives](#)
  - [Plant Extracts & Synthetic](#)
  - [PINEYE™ Label](#)
- [Solution Center](#)
  - [Agriculture](#)
  - [Feed Additives](#)

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**THANK YOU**