

# Dr. Duke's Phytochemical and Ethnobotanical Databases



## Chemicals and their Biological Activities in: *Cymbopogon winterianus* JOWITT (Poaceae) -- Java Citronella, Mahapengiri

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### Chemicals

**2-HEXEN-1-AL *Plant*:**

No activity reported.

**2-HEXEN-1-OL *Plant*:**

Antiseptic; Pesticide

**ALPHA-CELANENE *Plant*:**

No activity reported.

**ALPHA-PINENE *Plant*:**

Allelochemic; Allergenic; Antiacne; Antibacterial; Antifeedant; Antiflu; Antiinflammatory 500 mg/kg; Antipneumonic; Antiseptic; Antispasmodic; Antistaphylococcic; Antiviral; Cancer-Preventive; Coleoptophile; Expectorant; FLavor FEMA 15-150; Herbicide IC50=30 uM; Insecticide 0.82 uM/fly; Insectifuge 50 ppm; Insectiphile; Irritant; P450-2B1-Inhibitor IC50=0.087 uM; Perfumery; Pesticide; Sedative; Spasmodic; Tranquilizer; Transdermal

**BENZALDEHYDE *Plant*:**

Allergenic; Anesthetic; Antibacterial; Anticancer; Antimutagenic; Antipeptic; Antiseptic; Antispasmodic; Antitumor; Candidicide; FLavor FEMA 150-800; Immunostimulant; Insecticide; Insectifuge 50 ppm; Motor-Depressant; Narcotic; Nematicide MLC=1 mg/ml; Pesticide; Sedative; Termiticide LD100=5 mg/g; Tyrosinase-Inhibitor ID50=0.82 mM ID50=820 uM ID50=830 uM ID50=87 ug/ml

**BETA-ELEMENE *Plant* 40 - 70 ppm**

Anticancer (Cervix); Antigliomic; Antiproliferant; Antitumor (Cervix); Apoptotic

**BISABOLENE *Plant*:**

No activity reported.

**BOURBONENE *Plant*:**

No activity reported.

**CADINOL *Plant*:**

No activity reported.

**CALAMENENE *Plant*:**

No activity reported.

**CARYOPHYLLENE *Plant* 84 - 147 ppm**

Aldose-Reductase-Inhibitor; Allergenic; Analgesic; Antiacne; Antiasthmatic; Antibacterial; Anticariogenic  $MIC=>1,600\text{ ug/ml}$ ; Antidermatitic; Antiedemic; Antifeedant 500 ppm; Antiinflammatory  $IC50=100\text{ uM}$ ; Antileishmanic; Antionychyotic; Antiproliferant; Antispasmodic; Antistaphylococcic; Antistreptococcic; Antitumor; Antiulcer; Candidicide; FLavor *FEMA* 20-200; Fungicide; Gastroprotective; Insectifuge; Irritant; Larvicide; Mosquitocide; Perfumery; Pesticide; Sedative; Termitifuge

**CITRAL *Plant* 8 - 14 ppm**

Allergenic; Antiallergic; Antianaphylactic; Antibacterial; Antihistaminic; Antiseptic 5.2 x phenol; Antishock; Barbituate-Synergist; Bronchorelaxant; Cancer-Preventive; Expectorant; FLavor *FEMA* 4-170; Fungicide  $MIC\ 625\text{ ug/ml}$ ; Glaucomagenic; Herbicide  $IC50=115\text{ uM}$ ; Nematicide  $IC52=100\text{ ug/ml}$   $MLC=100-260\text{ ug/ml}$ ; Perfumery; Pesticide; Prostatitigenic 185 mg/kg/day/3 ms; Sedative  $ED\ 1-32\text{ mg/kg}$ ; Teratogenic; Trichomonicide  $LD100=150\text{ ug/ml}$ ; Tyrosinase-Inhibitor  $ID50=1.5\text{ mM}$

**CITRONELLAL *Plant* 1,000 - 2,289 ppm**

Acaricide; Allergenic; Antibacterial; Antiseptic 3.8 x phenol; Antistaphylococcic; Antistreptococcic; Candidicide; Embryotoxic; FLavor *FEMA* <1; Fungicide; Insectifuge; Irritant; Motor-Depressant; Mutagenic?; Nematicide  $MIC\ 1\text{ mg/ml}$ ; P450-2B1-Inhibitor  $IC50=1.56\text{ uM}$ ; Perfumery; Pesticide; Sedative  $ED=1\text{ mg/kg}$ ; Teratogenic

**CITRONELLOL *Plant* 440 - 770 ppm**

Allergenic; Antibacterial; Antiseptic; Antistaphylococcic; Antistreptococcic; Candidicide; FLavor *FEMA* 1-50; Fungicide; Herbicide  $IC50=160\text{ uM}$ ; Irritant; Nematicide  $MLC=100\text{ ug/ml}$ ; Perfumery; Pesticide; Sedative; Trichomonicide  $LD100=300\text{ ug/ml}$

**CITRONELLYL-ACETATE *Plant* 80 - 280 ppm**

FLavor *FEMA* <1-700; Irritant

**CITRONELLYL-BUTYRATE *Plant*:**

FLavor *FEMA* <1-2

**CITRONELLYL-CITRONELLATE *Plant* 66 - 233 ppm**

No activity reported.

**CUBEBENE *Plant*:**

No activity reported.

**CYMBOPOL *Plant* 60 - 105 ppm**

No activity reported.

**D-1-METHYL-3-CYCLOHEXANONE *Plant*:**

No activity reported.

**DIACETYL Plant:**

FLavor *FEMA* 3-50; Irritant

**DICITRONELLOXIDE Plant:**

No activity reported.

**DIPENTENE Plant:**

Allergenic; Antibacterial; Antiviral; Expectorant; Irritant; Pesticide; Sedative

**ELEMOL Plant 40 - 420 ppm**

Antiacetylcholinesterase *IC*<sub>50</sub>=34 ug/ml; Antiulcer

**EUGENOL Plant 66 - 233 ppm**

Acaricide *LD*<sub>50</sub>=5.47 ug/sq cm cf *DEET* at 37.59 ug/sq cm; Allergenic; Analgesic; Anesthetic 200-400; Antiaggregant *IC*<sub>50</sub>=0.3 uM; Antiarachidonate; Antibacterial 500 ppm *MBC*=400 ug/ml; Anticonvulsant; Antiedemic 100; Antiestrogenic; Antifeedant; Antigenotoxic 50-500 mg/kg orl mus; Antiherpetic *IC*<sub>50</sub>=16.2-25.6 ug/ml; Antiinflammatory (11 uM) *IC*<sub>97</sub>=1,000 uM; Antikeratotic *IC*<sub>50</sub>=16.2-25.6 ug/ml; Antimitotic; Antimutagenic; Antinitrosating; Antioxidant 10 uM *IC*<sub>65</sub>=30 ppm; Antiprostaglandin 11 uM *IC*<sub>50</sub>=9.2 mM; Antipyretic 3 ml/man/day; Antiradicular *EC*<sub>50</sub>=2 ul/l; Antisalmonella *MIC*=400 ug/ml; Antiseptic 3 ml/man/day 400 ug/ml; Antispasmodic; Antistaphylococcic; Antithromboxane; AntiTNF; Antitumor; Antiulcer; Antiviral *IC*<sub>50</sub>=16.2-25.6 ug/ml; Apifuge; Calcium-Antagonist *IC*<sub>50</sub>=200 uM gpg *IC*<sub>50</sub>=224 uM; Cancer-Preventive; Candidicide; Carcinogenic?; Carminative; Choleric; CNS-Depressant; COX-1-Inhibitor *IC*<sub>97</sub>=1,000 uM; COX-2-Inhibitor *IC*<sub>50</sub>=129 uM *IC*<sub>>97</sub>=1,000 uM; Cytochrome-P450-Inhibitor; Cytotoxic 25 ug/ml; Dermatitigenic; Enterorelaxant; FLavor *FEMA* 10-500; Fungicide; Hepatoprotective 100 ppm; Herbicide; Insecticide; Insectifuge; Irritant; Juvabional; Larvicide; Motor-Depressant; Nematicide *MLC*=2,000 ug/ml; Neurotoxic; Perfumery; Pesticide; Prostaglandin-Synthesis-Inhibitor 1 mM rbt *IC*<sub>50</sub>=9.2 uM; Sedative; Termiticide *LD*<sub>100</sub>=5 mg/g; Trichomonicide *LD*<sub>100</sub>=300 ug/ml; Trichomonistat *IC*<sub>50</sub>=10 ug/ml; Trypsin-Enhancer; Ulcerogenic; Varroacide; Vasodilator; Vermifuge

**FARNESOL Plant 24 - 42 ppm**

Allergenic; Antiadenomic; Anticancer (Pancreas) *IC*<sub>50</sub>=39 uM; Anticarcinomic (Colon); Anticarcinomic (Lung); Antileukemic; Antimelanomic *IC*<sub>50</sub>=50 uM/l; Antispasmodic; Apoptotic; FLavor *FEMA* 0.1-3; Juvabional; Nematicide *MLC*=100 ug/ml; Perfumery; Pesticide; Pheromonal; Sedative; Trichomonicide *LD*<sub>100</sub>=100 ug/ml

**FURFURAL Plant:**

Antiseptic; FLavor *FEMA* 1-30; Fungicide; Insecticide; Irritant; Pesticide

**GAMMA-CADINENE Plant 40 - 158 ppm**

No activity reported.

**GAMMA-CADINOL Plant 60 - 105 ppm**

No activity reported.

**GERANIOL Plant 1,064 - 3,150 ppm**

Allergenic; Anthelmintic; Antibacterial *MBC*=800 ug/ml *MIC*=400 ug/ml *MIC*=64 ug/ml; Anticancer (Pancreas) *IC*<sub>50</sub>=265 uM; Anticariogenic *MIC*=400 ug/ml; Antimelanomic *IC*<sub>50</sub>=150 uM/l; Antisalmonella *MIC*=400 ug/ml; Antiseptic 400-800

*ug/ml 7 x phenol MIC=64 ug/ml; Antispasmodic; Antitubercular; Antitumor; Antitumor (Pancreas) IC50=265 uM; Ascaricide; Cancer-Preventive; Candidicide; CNS-Stimulant; Embryotoxic; Emetic 3 x ipecac; Expectorant; FLavor FEMA 1-10; Fungicide IC93=2 mM; Herbicide IC100-2,000 uM; Insectifuge 50 ppm; Insectiphile; Mycobactericide MIC=64 ug/ml; Nematicide IC86=100 ug/ml MLC=1,000 ug/ml; Perfumery; Pesticide; Sedative; Trichomonicide LD100=300 ug/ml*

**GERANYL-ACETATE Plant 120 - 556 ppm**

Allergenic; FLavor FEMA 1-20; Insectiphile; Perfumery; Sedative

**GERANYL-BUTYRATE Plant 66 - 233 ppm**

FLavor FEMA 1-10; Perfumery; Sedative

**GERANYL-FORMATE Plant 100 - 175 ppm**

FLavor FEMA 1-10; Perfumery

**HYDROXYCITRONELLIC-ACID Plant:**

No activity reported.

**ISOAMYL-ALCOHOL Plant:**

Emetic; Irritant; Perfume

**ISOBUTYL-ALCOHOL Plant:**

Irritant; Narcotic

**ISOPULEGOL Plant:**

Antiacetylcholinesterase IC50=2.0 mM; FLavor FEMA 5-30; Perfumery

**ISOVALERALDEHYDE Plant:**

FLavor FEMA 0.5-5

**L-3-METHYL-1-PENTANAL Plant:**

No activity reported.

**L-3-METHYL-1-PENTANOL Plant:**

No activity reported.

**L-LIMONENE Plant 80 - 350 ppm**

Antiacetylcholinesterase IC25=1.2 mM IC27=164 ug/ml

**LINALOL Plant 40 - 105 ppm**

No activity reported.

**LINALYL-ACETATE Plant 80 - 140 ppm**

Anesthetic 0.01-1 ug/ml; Antioxidant 400 ppm; Antispasmodic ED50=0.21 mg/ml; FLavor FEMA 2-15; Motor-Depressant; Perfumery; Sedative

**METHYL-EUGENOL Plant 20 - 60 ppm**

Anesthetic; Antibacterial; Anticonvulsant; Antidote (Strychnine); Antifeedant; Antioxidant EC50=100 ul/l; Antiradicular; Antiseptic; Cancer-Preventive; Carcinogenic; FLavor FEMA 5-15; Fungicide; Fungistat 100 ug/mL; Insectifuge; Myorelaxant; Narcotic; Nematicide MIC=1 mg/ml; Perfumery; Pesticide; Sedative

**METHYL-HEPTENONE *Plant*:**

No activity reported.

**METHYL-ISOEUGENOL *Plant* 92 - 161 ppm**

Anesthetic; Antiaggregant  $IC_{50}=56 \text{ ug/mL}$ ; Antibacterial; Antihistaminic; Antispasmodic; Cancer-Preventive; Candidicide; Expectorant; FLavor *FEMA* 5-100; Herbicide; Insect-attractant; Nematicide  $MLC=1 \text{ mg/ml}$ ; Perfumery; Pesticide; Toxic

**MYRCENE *Plant*:**

ACE-Inhibitor  $100 \text{ ug/ml}$ ; Aldose-Reductase-Inhibitor; Allergenic; Analgesic; Antibacterial; Anticonvulsant; Antimutagenic; Antinitrosaminic; Antinociceptive  $10-20 \text{ mg/kg ipr mus } 20-40 \text{ mg/kg scu mus}$ ; Antioxidant; Antispasmodic; Chemopreventive; FLavor *FEMA* 0.5-9; Fungicide; Hypothermic; Insectifuge; Irritant; Myorelaxant  $100-200 \text{ mg/kg}$ ; P450-2B1-Inhibitor  $IC_{50}=0.14 \text{ uM}$ ; Perfumery; Pesticide

**N-1-HEXANOL *Plant*:**

No activity reported.

**NERAL *Plant*:**

Antibacterial; Antispasmodic; Pesticide; Termiticide  $LD_{100}=5 \text{ mg/g}$

**NEROL *Plant* 308 - 539 ppm**

Antibacterial; Antiseptic; FLavor *FEMA* 1-20; Perfumery; Pesticide; Sedative; Trichomonicide  $ED_{100}=300 \text{ ug/ml}$

**SESQUICITRONELLENE *Plant*:**

No activity reported.

**VANILLIN *Plant*:**

Allelochemic  $IC_{50}=4.26 \text{ mM}$ ; Allergenic; Antianemic; Anticancer; Antidrepanocytic; Antiescherichic  $10-100 \text{ mmol/l}$ ; Antilactobacillic; Antilisteria; Antimutagenic; Antioxidant =ascorbic acid; Antipolio; Antiradicular  $7 \times \text{ quercetin}$ ; Antisickling; Antitumor; Antitumor-Promoter; Antiviral; Antiyeast  $8-30 \text{ mM}$ ; Bacteristat  $10-40 \text{ mmol/l}$ ; Cancer-Preventive; Candidicide  $8-20 \text{ mM}$ ; Choloretic; FLavor *FEMA* 50-20,000; Fungicide; Immunosuppressant; Insectifuge?; Irritant; Perfumery; Pesticide