

PRODUCT TECHNICAL BOOK

PRODUCTS
DESCRIPTION





GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Deya

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 19-21% Linalyl Acetate: 47-51%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Created in the Institute of Roses, Essential and Medical Cultures (IREMC) - Kazanlak, by Stanko Stanev via an individual selection in F1-seed population obtained at open pollination of the "Yubileina" variety.

It was recognised by the State Variety Commission in 2020.

SCIENTIFIC LITERATURE

EFFECT

Linalool compound has sedative effects on the CNS

ROUTE USED IN EXPERIMENT

In vivo:
Psychopharmacological activity in mice.

Source [1] [2] [3]

EFFECT

Antioxidant and hyaluronidase inhibitory activity

ROUTE USED IN EXPERIMENT

In vitro: Enzymatic Model – Oxidative stress, Extracellular matrix breakdown and hyaluronic acid homeostasis.

Source [4]

EFFECT

Antioxidant and lipoxygenase inhibitory activity

ROUTE USED IN EXPERIMENT

In vitro: Enzymatic Model – Pharmaceutical ingredients for several skin diseases.

Source [5]

EFFECT

Anti-inflammatory activity of linalool and linalyl acetate

ROUTE USED IN EXPERIMENT

In vivo: Carrageenin-induced edema in rats was used as a model of inflammation.

Source [6]

Even though the Bulgarian lavender variety Deya has very few research articles published, it is possible to deduce, due to its high relative content of Linalool, and specially, Linalyl acetate (47-51%), the corresponding ester of Linalool, that these compounds support the hypothesis that they play a major role in the anti-inflammatory activity displayed by some essential oils containing them [6].

Additionally, studies with regards to different cultivars that present high levels of linalyl acetate and linalool and low level of camphor (<0.5%) present an high antioxidant activity [7], which makes these essential oils as possible ingredients for innovative cosmetic formulations.

REFERENCES

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TRUE LAVENDER CV DEYA



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Deya essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Deya

PHYSICAL APPEARANCE Liquid	FLASH POINT 71°C
COLOUR Pale Yellow	REFRACTIVE INDEX 1.461 ± 0.004
RELATIVE DENSITY 0.889 ± 0.004	ESTER VALUE 144.7 ± 0.8
OPTICAL ROTATION -6.5 ± 0.4	ACID VALUE 0.63 ± 0.01
STORAGE AND STABILITY	
STABILITY When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months	STORAGE To be kept in closed container in a dark, fresh and dry place



GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Hemus

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 30-40% Linalyl Acetate: 39-43%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Created by the botanists Vasil Staykov, Blagovesta Chingova, Hristo Chorbazhiyski and Penka Kenderova in 1973, using the method of individual selection and clonal selection.

SCIENTIFIC LITERATURE

EFFECT

Antioxidant and anti-inflammatory effects

ROUTE USED IN EXPERIMENT

In vitro: Against *Staphylococcus aureus* Rosenbach, *Streptococcus pyogenes* Rosenbach, *Escherichia coli* Mig, etc.
Source [1] [2]

EFFECT

Higher amounts linalool and linalyl acetate from lavender have higher effectiveness against facial skin microbes

ROUTE USED IN EXPERIMENT

In vitro: Mixed microbiota of the face skin without signs of lesions.

Source [3]

EFFECT

Antioxidant activity

ROUTE USED IN EXPERIMENT

Free radical scavenging capacity (DPPH).

Source [4]

EFFECT

Anti-microbial activity, among others

ROUTE USED IN EXPERIMENT

N/A.
Review article: identify publications from the period 1900–2023.

Source [5]

Several pharmacological effects were recently reviewed making comparisons between different lavender cultivars including Hemus. These studies included information with regards to anti-allergic properties, anti-inflammatory properties, antimicrobial activity and pest control and insect repellent activity [5] providing elucidating potential of this essential oil.

The content of the linalyl acetate by the variety Hemus is the highest, meeting the requirements of the international standard. The essential oil could be defined as high quality due to its ratio of Linalool and Linalyl acetate [6].

REFERENCES

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TRUE LAVENDER CV HEMUS



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Hemus essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Hemus

PHYSICAL APPEARANCE

Liquid

FLASH POINT

71°C

COLOUR

Pale Yellow

REFRACTIVE INDEX

1.462 ± 0.004

RELATIVE DENSITY

0.882 ± 0.004

ESTER VALUE

147.3 ± 0.8

OPTICAL ROTATION

-6.9 ± 0.4

ACID VALUE

0.56 ± 0.01

STORAGE AND STABILITY

STABILITY

When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months

STORAGE

To be kept in closed container in a dark, fresh and dry place



GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Zhaneta

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 20-25% Linalyl Acetate: 34-38%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Another variety that was created in the Institute of Roses, Essential and Medical Cultures (IREMC) - Kazanlak, by Stanko Stanev via an individual selection in F1-seed population obtained at open pollination of the "Yubileina" variety with an interesting stable profile.

SCIENTIFIC LITERATURE

EFFECT

Local anesthetic action

ROUTE USED IN EXPERIMENT

Inhibitory effect of linalool on the acetylcholine (ACh) release and on the channel open time in the mouse neuromuscular junction.

Source [1]

EFFECT

Various pharmacological activities of Linalool

ROUTE USED IN EXPERIMENT

N/A.
Review article.

Source [2]

EFFECT

Treatment of hyperpigmentation

ROUTE USED IN EXPERIMENT

In vitro: Melanogenesis in melanocyte stimulating hormone (α -MSH) treated melanoma cells.

Source [3]

EFFECT

Anti-anxiety agent

ROUTE USED IN EXPERIMENT

In vivo: In specimens with phenylephrine-induced contraction and phosphorylation of myosin light chain (MLC).

Source [4]

Even though the Bulgarian lavender variety Zhaneta has very few research articles published as Deya, and has a smaller relative percentage of Linalyl acetate, it is possible to affirm that the percentage it presents of Linalyl acetate and its distinct aroma may be of use for cosmetic formulations for muscle relaxation, as an example [5] and other applications.

According to the Institute of Roses, Essential and Medical Cultures (IREMC) this is a variety considered to have an upper quality essential oil.

REFERENCES

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TRUE LAVENDER CV ZHANETA



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Zhaneta essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Zhaneta

PHYSICAL APPEARANCE

Liquid

FLASH POINT

71°C

COLOUR

Pale Yellow

REFRACTIVE INDEX

1.463 ± 0.004

RELATIVE DENSITY

0.884 ± 0.004

ESTER VALUE

144.1 ± 0.8

OPTICAL ROTATION

-6.8 ± 0.4

ACID VALUE

0.61 ± 0.01

STORAGE AND STABILITY

STABILITY

When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months

STORAGE

To be kept in closed container in a dark, fresh and dry place



GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Teres

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 23-30% Linalyl Acetate: 43-52%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Late flowering variety, also selected by IREMC, it is a variety with late flowering with a high content of linalyl acetate in the essential oil, ranging from 43-52%.

SCIENTIFIC LITERATURE

EFFECT

Linalyl acetate has a pro-drug behavior

ROUTE USED IN EXPERIMENT

Carrageenin-induced edema in rats was used as a model of inflammation.

Source [1]

EFFECT

Wound healing

ROUTE USED IN EXPERIMENT

Human clinical, animal trials and in vitro studies.

Source [2]

EFFECT

Suppression of allergic airway inflammation and mucous cell hyperplasia

ROUTE USED IN EXPERIMENT

In vivo: Mice sensitized by an intraperitoneal injection of ovalbumin (OVA).

Source [3]

EFFECT

Antioxidant and lipoxygenase inhibitory bioactivities

ROUTE USED IN EXPERIMENT

In vivo: In specimens with phenylephrine-induced contraction and phosphorylation of myosin light chain (MLC).

Source [4]

Teres variety is also another unique Bulgarian variety that has still very few research available. Nevertheless, it is possible to extrapolate that as other lavenders this is an essential oil that has a lot of potential due to its high linalyl acetate content.

Furthermore, rather recent research suggest that after proper UV- or γ -radiation treatment, Bulgarian lavender oil might find application as a good radioprotector, besides its activity as an antioxidant, in cosmetics and medicine [5].

REFERENCES

- [1] Peana, A., D'Aquila, P., Panin, F., Serra, G., Pippia, P., & Moretti, M. (2002). Anti-inflammatory activity of linalool and linalyl acetate constituents of essential oils. *Phytomedicine: international journal of phytotherapy and phytopharmacology*, 9 8, 721-6 . <https://doi.org/10.1078/094471102321621322>.
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- [3] Ueno-Iio, T., Shibakura, M., Yokota, K., Aoe, M., Hyoda, T., Shinohata, R., Kanehiro, A., Tanimoto, M., & Kataoka, M. (2014). Lavender essential oil inhalation suppresses allergic airway inflammation and mucous cell hyperplasia in a murine model of asthma. *Life sciences*, 108 2, 109-15 . <https://doi.org/10.1016/j.lfs.2014.05.018>.
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TRUE LAVENDER CV TERES



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Teres essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Teres

PHYSICAL APPEARANCE

Liquid

FLASH POINT

71°C

COLOUR

Pale Yellow

REFRACTIVE INDEX

1.463 ± 0.004

RELATIVE DENSITY

0.888 ± 0.004

ESTER VALUE

145.3 ± 0.8

OPTICAL ROTATION

-6.6 ± 0.4

ACID VALUE

0.61 ± 0.01

STORAGE AND STABILITY

STABILITY

When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months

STORAGE

To be kept in closed container in a dark, fresh and dry place



GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Sevtopolis

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 36-38% Linalyl Acetate: 30-34%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Created in 1987 by Blagovesta Chingova, Penka Kenderova, Raycho Tsvetkov and Radka Topuzlieva, using the chemical mutagenesis method in combination with clonal selection. In some studies Sevtopolis variety had the highest content of lavandulyl acetate [3].

SCIENTIFIC LITERATURE

EFFECT

Anti-fungal activity

ROUTE USED IN EXPERIMENT

Clinical trial.

Source [1]

EFFECT

Highest antioxidant activity in a comparative study

ROUTE USED IN EXPERIMENT

Free radical scavenging capacity (DPPH).

Source [2]

EFFECT

Production of proinflammatory cytokines and proregenerative growth factors

ROUTE USED IN EXPERIMENT

Gene expression of the selected signaling molecules by HaCaT cells was investigated using real-time PCR.

Source [3]

EFFECT

"Sevtopolis" variety essential oil with antimicrobial properties

ROUTE USED IN EXPERIMENT

Kirby-Bauer agar disc diffusion method against five common bacteria.

Source [4]

According to literature Sevtopolis variety Munstead and Sevtopolis varieties stand out both in terms of fresh stem flower yield and essential oil quality. This variety essential has been tested for its antimicrobial properties [4].

In fact, according to European (EU) and American and British (USP and BP) ISO 3515:2002 Lavender Oil Quality Standards, linalool and linalyl acetate cannot be less than 20-25% to be evaluated in the cosmetics industry and accordingly, it is seen that all varieties on the study, Sevtopolis, Raya, Munstead, Silver and Vera exceed this limit and are considered varieties that commonly fall within the Quality Standards mentioned and have great potential in the aforementioned segment [5].

REFERENCES

- [1] Behmanesh, F., Pasha, H., Sefidgar, A., Taghizadeh, M., Moghadamnia, A., Rad, H., & Shirkhani, L. (2015). Antifungal Effect of Lavender Essential Oil (*Lavandula angustifolia*) and Clotrimazole on *Candida albicans*: An In Vitro Study. *Scientifica*, 2015. <https://doi.org/10.1155/2015/261397>.
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- [3] Miastkowska, M.; Kantyka, T.; Bielecka, E.; Kałucka, U.; Kamińska, M.; Kucharska, M.; Kilanowicz, A.; Cudzik, D.; Cudzik, K. (2021) Enhanced Biological Activity of a Novel Preparation of *Lavandula angustifolia* Essential Oil. *Molecules* 2021, 26, 2458. <https://doi.org/10.3390/molecules26092458>
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- [5] Mustafa, A., Serkan, U., Sinem, A. (2022) Determination of agricultural and technological characteristics of different lavender (*Lavandula angustifolia* Mill.) genotypes in ecological conditions of Çorum province. *Turk J. Food Agric. Sci.* 2022, 4 (1): 18-24e-ISSN: 2687-3818 (Online) Doi:10.53663/turjfas.1116239.



TRUE LAVENDER CV SEVTOPOLIS



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Sevtopolis essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Sevtopolis

PHYSICAL APPEARANCE

Liquid

FLASH POINT

71°C

COLOUR

Pale Yellow

REFRACTIVE INDEX

1.461 ± 0.004

RELATIVE DENSITY

0.885 ± 0.004

ESTER VALUE

146.7 ± 0.8

OPTICAL ROTATION

-6.9 ± 0.4

ACID VALUE

0.58 ± 0.01

STORAGE AND STABILITY

STABILITY

When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months

STORAGE

To be kept in closed container in a dark, fresh and dry place



GENERAL INFORMATION

SPECIES

Lavandula angustifolia Mill. cv. Yubileina

PLANT PART USED

Whole aerial part

ORIGIN

Cultivated

PROCESSING

Steam-distillation

MAIN COMPOUNDS

Linalool: 20-26% Linalyl Acetate: 35-42%

CHEMOTYPE

N/A

ODOR

Characteristic, fresh floral, reminiscent of the smell of blooming lavender inflorescences (ISO 3515:2002).

CURIOSITIES

Created in 1988 by Blagovesta Chingova, Penka Kenderova, Raycho Tsvetkov and Radka Topuzlieva by the hybridisation method from the hybrid No. 643x and an individual selection in the first seed generation from open pollination of the hybrid.

SCIENTIFIC LITERATURE

EFFECT

Antioxidant activity

ROUTE USED IN EXPERIMENT

Carotene Bleaching, DPPH radical dot and ABTS radical dot+ assays.

Source [1]

EFFECT

Reduces the intensity of spot skin melanin

ROUTE USED IN EXPERIMENT

Pharmaceutical cream preparation and clinical trials.

Source [2]

EFFECT

Painful and inflammatory conditions

ROUTE USED IN EXPERIMENT

Carrageenan test in rats.

Source [3]

EFFECT

Potential for anti-proliferative cell processes

ROUTE USED IN EXPERIMENT

Against different cancer cell lines, as well as its in vitro and in vivo topical and acute anti-inflammatory properties.

Source [4]

According to literature, Yubileina variety essential oil used in tests with regards to the evaluation of antioxidant activity, it had the highest inhibition in comparison with other oils [1].

This is a variety that presents more studies also due to its historical production, since 1988. This variety, as Sevtopolis, Druzhba, Raya, Hebar and Hemus present a very fine chemical profile, being in accordance with International Quality Standards, whereas Lavandin doesn't fall into these standards [1]. Other potential applications of *L. angustifolia* essential oils, it's through its encapsulation against fungi, including skin fungi [5].

REFERENCES

- [1] Kivrak, Ş. (2018). Essential oil composition and antioxidant activities of eight cultivars of Lavender and Lavandin from western Anatolia. *Industrial Crops and Products*, 117, 88–96. doi:10.1016/j.indcrop.2018.02.089.
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TRUE LAVENDER CV YUBILEINA



TECHNICAL DATA SHEET

CAS NO: 289-995-2 EINECS NO: 90063-37-9

PRODUCT DESCRIPTION

True Lavender cultivar Yubileina essential oil

BOTANICAL NAME

Lavandula angustifolia Mill. cv. Yubileina

PHYSICAL APPEARANCE

Liquid

FLASH POINT

71°C

COLOUR

Pale Yellow

REFRACTIVE INDEX

1.462 ± 0.004

RELATIVE DENSITY

0.879 ± 0.004

ESTER VALUE

149.4 ± 0.8

OPTICAL ROTATION

-7.2 ± 0.4

ACID VALUE

0.54 ± 0.01

STORAGE AND STABILITY

STABILITY

When stored within advised conditions, re-test after 12 months then at 6 monthly intervals up to a maximum life of 36 months

STORAGE

To be kept in closed container in a dark, fresh and dry place



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