

VIRIVEA

Embracing Beauty, Preserving Nature

Highly sustainable botanical actives
derived from local vertical farming



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The future is now...

- In July 2023, some mysterious deaths of cows were reported in northern Italy.
- Doctors found acute neurological symptoms.
- Toxicological studies revealed a cyanide poisoning.

What happened?

An unusually period of drought put an omnipresent plant, *wild sorghum*, under stress. Slower metabolism led to an accumulation of durrin (cyanogenic glycoside). Durrin hydrolysis led to cyanide release.

→ **Adaptation to new climatic conditions may change the metabolite profile in some vegetal species.**

The future is now...

We have to ask ourselves:

- Will native plants in natural environments continue to produce the same metabolites in the future?
- How can we make sure to maintain a high degree of standardization of the relevant metabolites?
- How can we preserve the biodiversity of the planet?

AGENDA

- Vertical Farming – A most sustainable technology
- Introduction of two new botanicals
 - Holyveda VF
 - Insulvaria VF

Vertical Farming – The promises

Vertical farming enables:

- The enhancement of the expression of selected metabolites
- Consistent and reliable yields, no limitations through seasonality and geography
- Local sourcing, full traceability
- Control of the genetic integrity of the plant, no unwanted hybridization



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Vertical Farming – Technology

- ACE – Advanced Cultivation Environment
- AFA – Algorithmic Full Automation
- IMC – Ideal Molecular Chronobiology
- Water resource management
- Microbial and parasites management
- Zero residue certification
- Carbon footprint management

No GMO – Just the science of Nature



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Vertical Farming – What it means

95 %

less water use compared to conventional agriculture.

60 %

less fertilizer use compared to conventional agriculture.

75 %

less soil use compared to conventional agriculture.

100 %

of the energy required is produced on site.

0 %

pesticides content.

0 %

heavy metals content.



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[HOLYVEDA VF]

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Tulsi

The holy remedy



Scientific Name: Ocimum Sanctum

Common Names: Tulsi, Holy Basil, Sacred Basil

Family: Lamiaceae (Mint family)

Origin: Native to the Indian subcontinent and Southeast Asia.

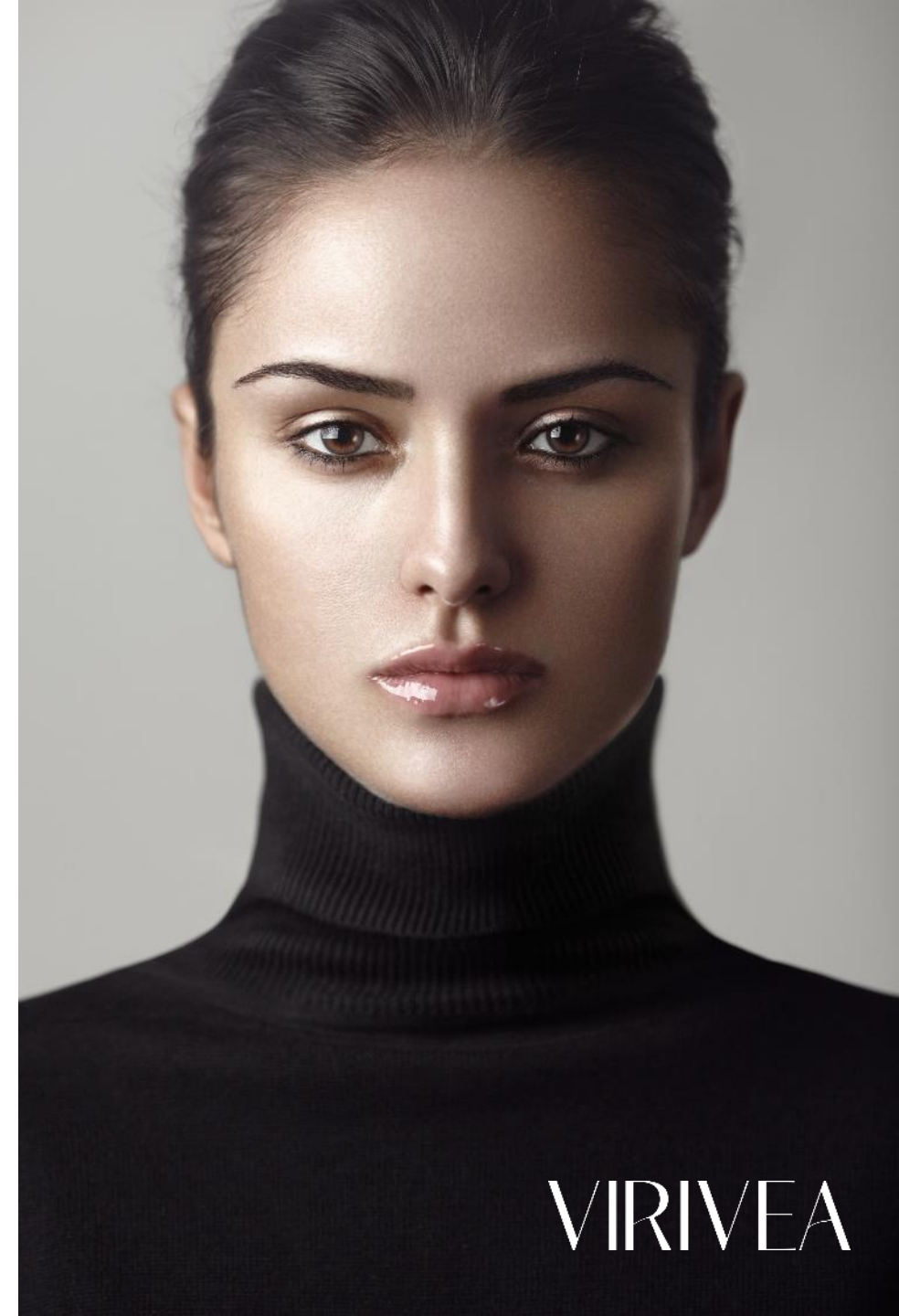
Description: Tulsi is a perennial herb with highly aromatic leaves and small purple flowers arranged in spikes. It typically grows up to 30-60 cm in height, with a bushy appearance.

Uses: It is believed to possess antibacterial, antiviral, and adaptogenic properties. Tulsi leaves are commonly used fresh, dried, or in the form of extracts or essential oils for various medicinal purposes, including respiratory health, stress relief, and immune support.

Holyveda VF

INCI NAME: Propanediol, Aqua, *Ocimum Sanctum Leaf Extract*

- The delicate skin surrounding the eyes area is very sensitive to the effects of environmental stressors, fatigue and inner stress.
- Drawing inspiration from Tulsi and the principles of meditation on stress management, Holiveda VF:
 - balances cortisol levels within cells, allowing for a serene release of tension
 - revitalizes tired features & brightens weary gazes
 - unveils a look that emanates a sense of inner peace and radiance.

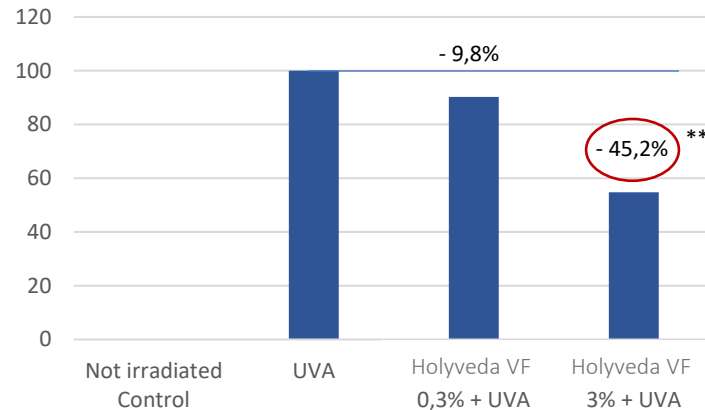


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Holyveda VF – Scientific data

ROS, relative level

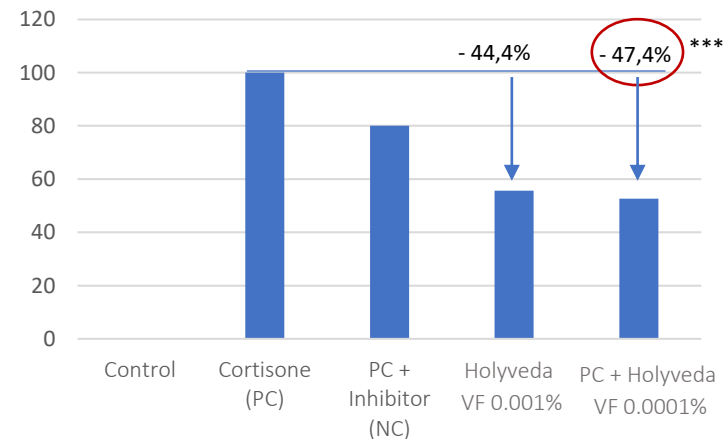
Holyveda VF is an effective protector against UV-A induced oxidative damage in human keratinocytes.



Normal Human Keratinocytes (HaCaT)
ROS stress agent: UV-A damage

Cortisol, relative level

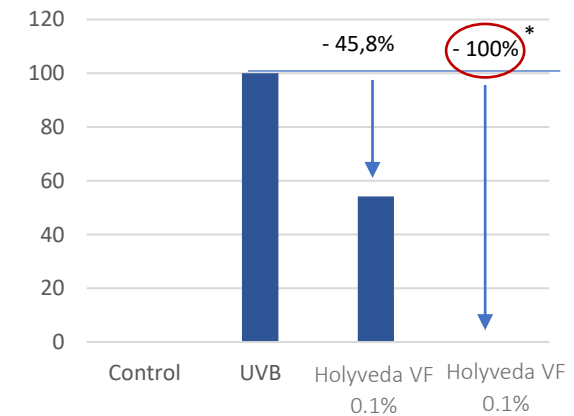
Treatment with Holyveda VF reduces skin stress by inhibiting cortisol synthesis in human keratinocytes.



Human Keratinocytes, ELISA quantification
Positive control: Cortisone 10-3M
Negative control: 11 beta HSD1 inhibitor

AGE, relative level

Holyveda VF is an effective protector against protein glycation end products formation.



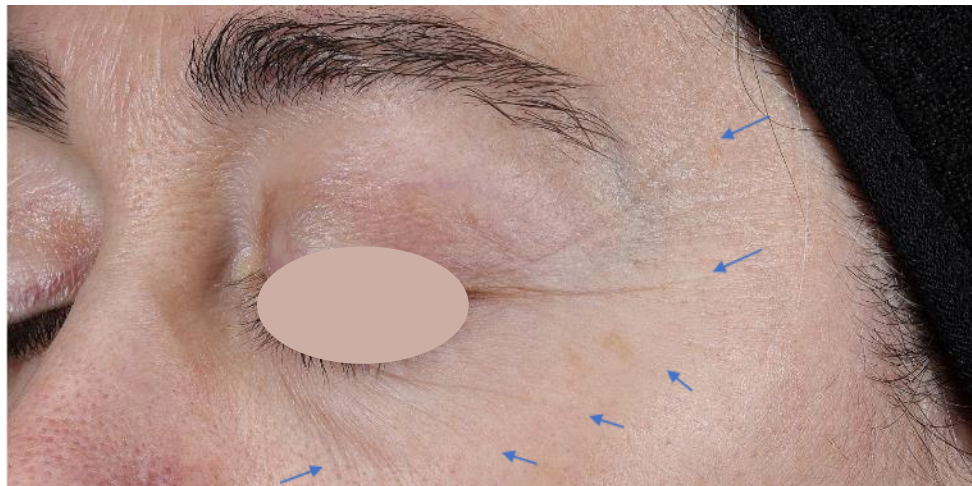
Normal Human Keratinocytes (HaCaT). Glycation is triggered by UV-B stress AGEs are quantified by ELISA

Significance: * p<0.05 ** p<0.005 *** p<0.001

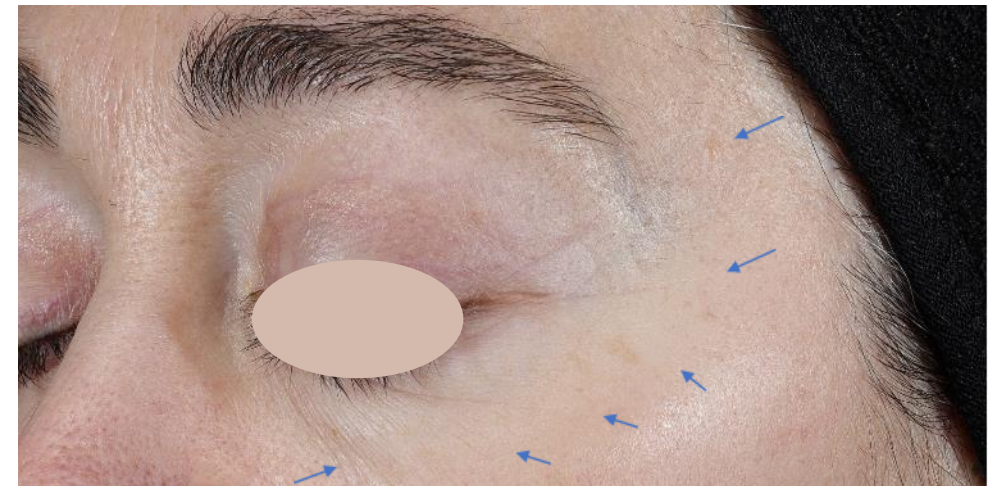
Holyveda VF – Clinical data

Holyveda VF significantly reduces the signs of stress and fatigue. The efficacy is well perceived by the panelists.

Holyveda VF at 1.5%.



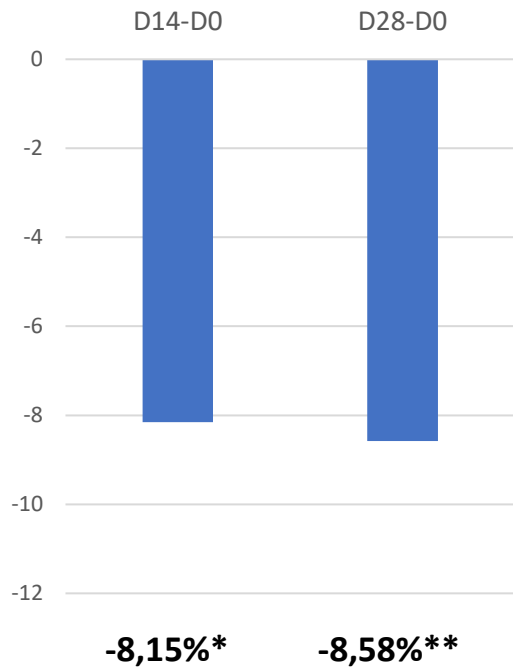
Volunteer 26 – day 0



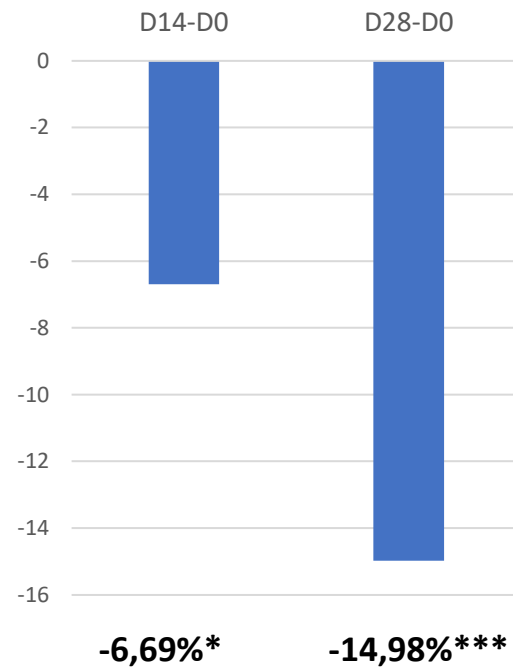
Volunteer 26 – day 28

Holyveda VF – Clinical data

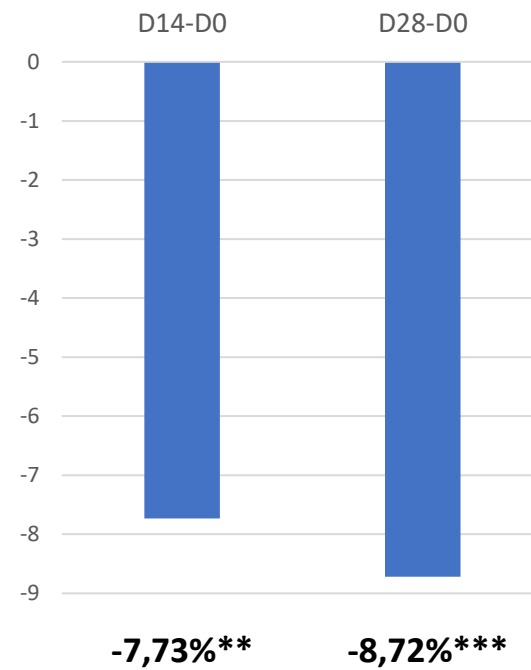
Crow's feet wrinkle volume



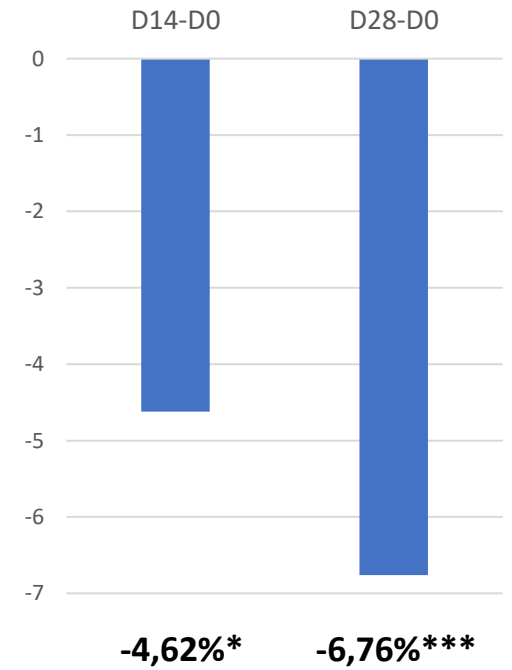
Fine lines depth



Contrast skin vs dark circles



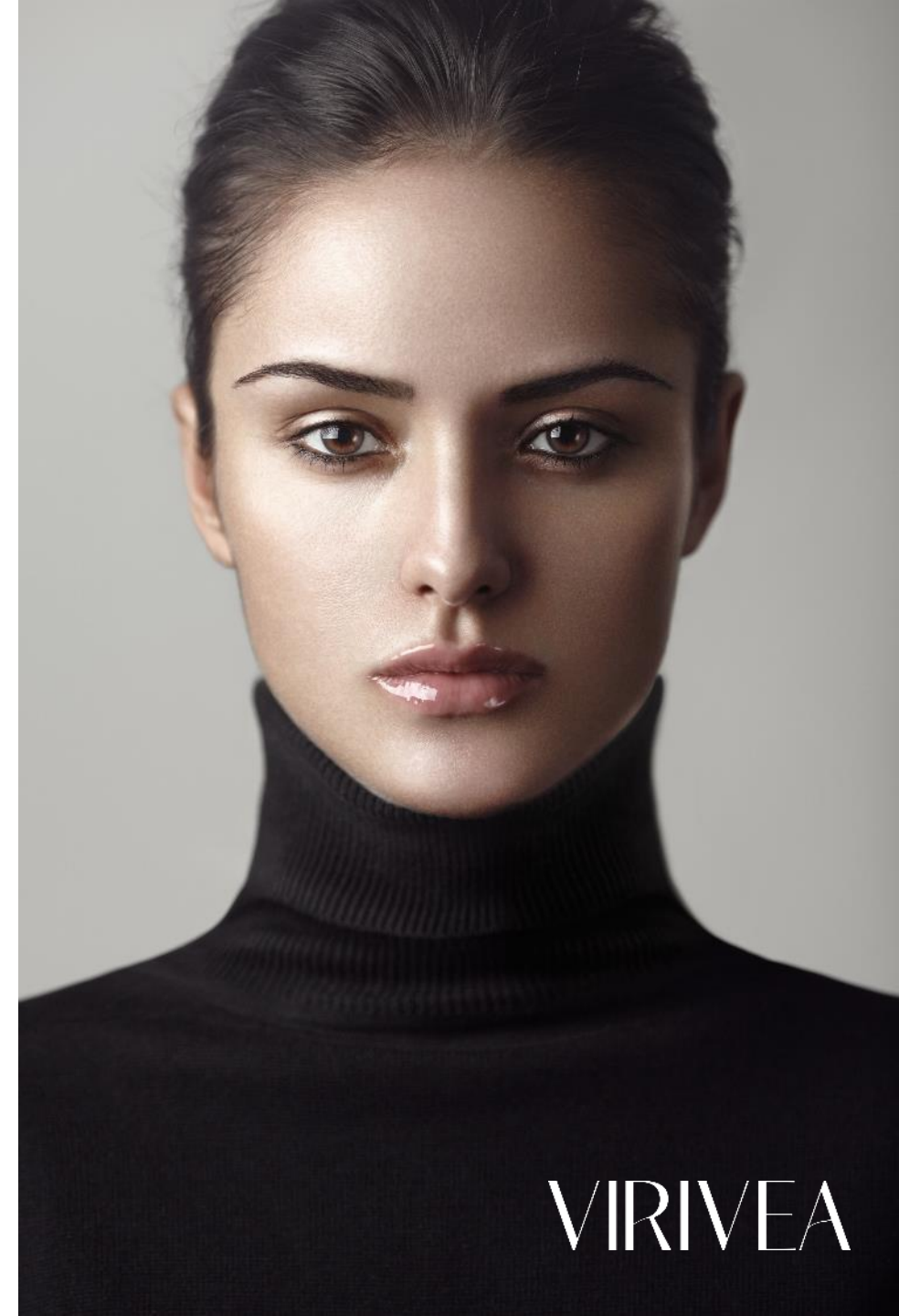
Eye bags



Holyveda VF: 1.5% Significance: * p<0.05 ** p<0.005 *** p<0.001

Holyveda VF – Clinical study setup

- 30 volunteers vs. placebo
- Age: 46-60
- Skin type: normal, mixed, oily, dry
- Tested area: eye contour
- 2 applications/day
- Duration: 14-28 days
- Tested formulation: water-based gel
- Tested dose: 1.5%



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[INSULARIA VF]

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Cistus Incanus

The mediterranean wisdom



Scientific Name: Cistus Incanus

Common Names: Pink rockrose, Pink cistus, Cretan rockrose

Family: Cistaceae

Origin: Mediterranean area and Island like Greece, Italy, Turkey

Description : this plant thrives in dry, rocky terrain, often found on hillsides and in scrublands.

Uses : Rich in polyphenols, it is believed to possess antioxidant, anti-inflammatory, and antimicrobial properties, supporting immune function and overall well-being. In infusion for health benefit and essential oil in aromatherapy for calming and rejuvenating effect.

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Insularia VF

INCI NAME: Propanediol, Aqua, *Cistus Incanus Flower/Leaf/Stem Extract*

The UV radiation is the main cause of skin cancer and skin ageing. Starting from the unique phytochemistry of *Cistus Incanus*, rich in flavonoids and polyphenols, INSULARIA VF:

- regulates melanin, avoiding the overproduction due to UV exposure
- preserves DNA integrity
- prevents collagen degradation caused by UV radiation

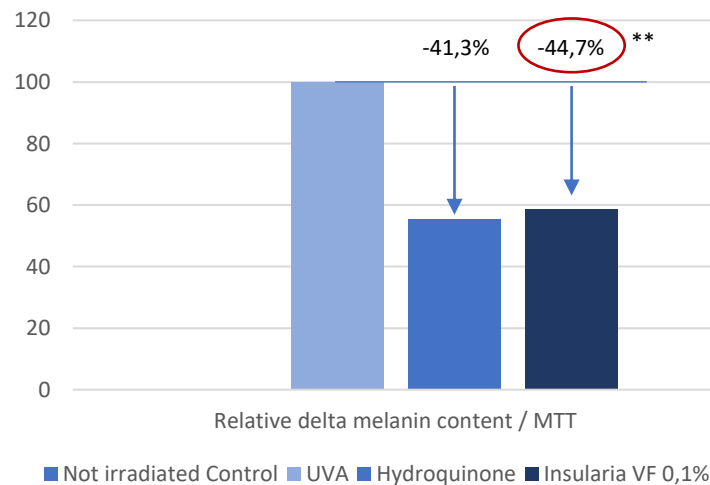


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Insularia VF – Scientific data

Melanin, relative level

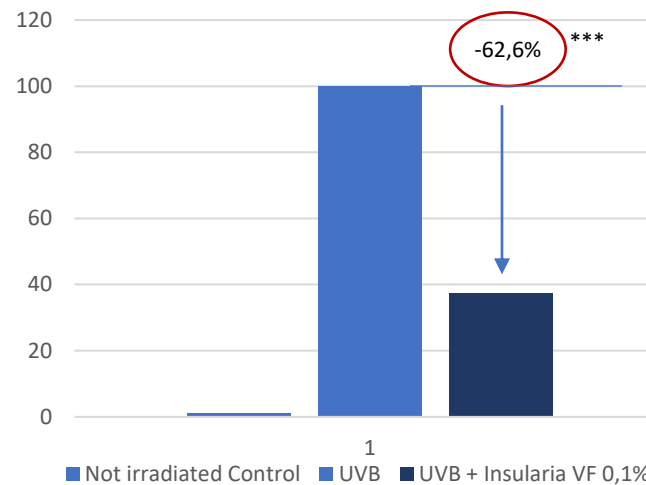
INSULARIA VF presents whitening effect on melanocytes comparable with the hydroquinone control.



Normal Human Epidermal Melanocytes (NHEM).
 Melanin production induced by UV-A: 5J/cm²
 Negative control: Hydroquinone (not cytotoxic %)
 Melanin detection technique: spectrophotometry

Thimine dimers quantification

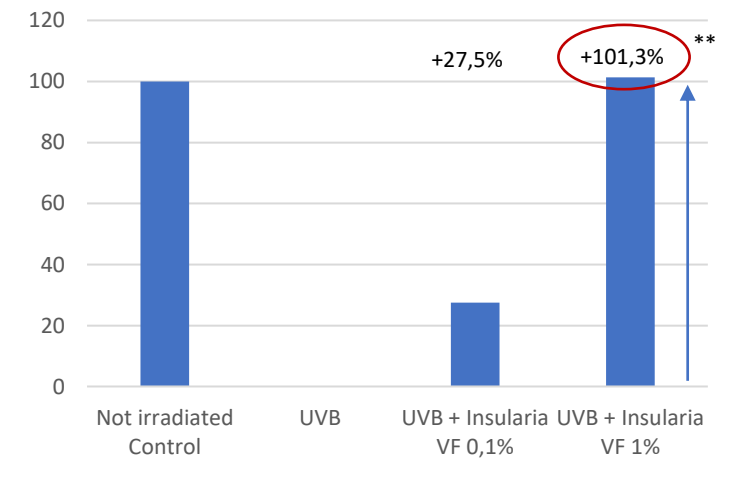
INSULARIA VF protects against UV-B DNA damage.



Normal Human Keratynocytes (HaCaT)
 DNA stress agent: UV-B dose: 0,4J/cm²
 Technique: flow cytometry

Relative %, Procollagen-1

INSULARIA VF is effective for protecting Procollagen-1 from UV-B damage.



Normal Human Fibroblasts (NHDF). Procollagen-1
 stress agent: UV-B irradiation: 25mJ/cm². Detection
 method: ELISA

Significance: * p<0.05 ** p<0.005 *** p<0.001

Insularia VF – Clinical data

Insularia VF brings back dark circles and restores glow for a serene look.



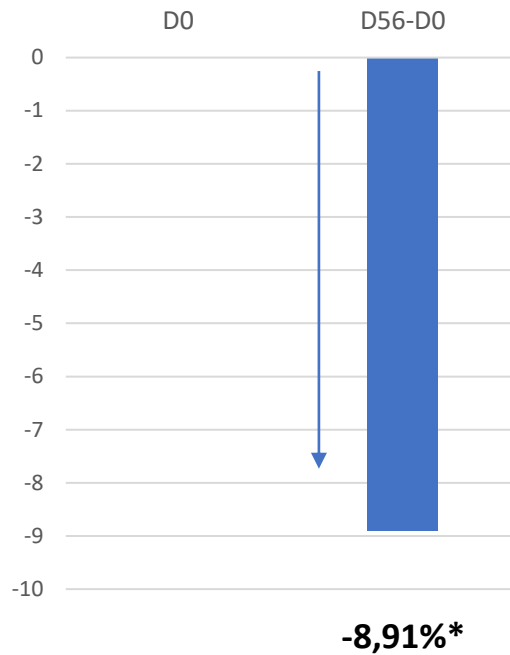
Volunteer 20 – day 0



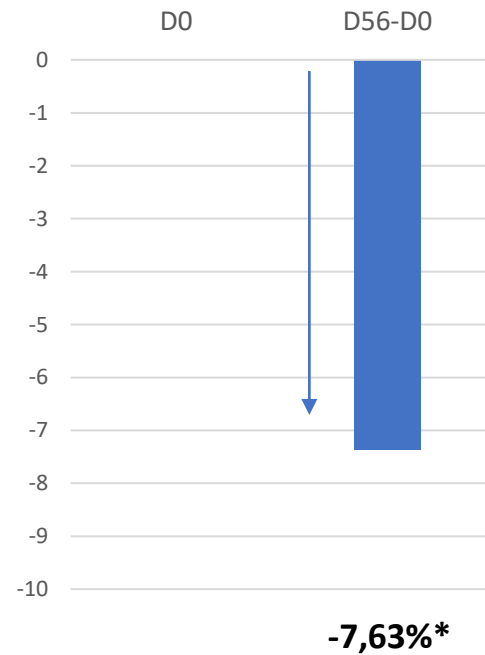
Volunteer 20 – day 56

Insularia VF – Clinical data

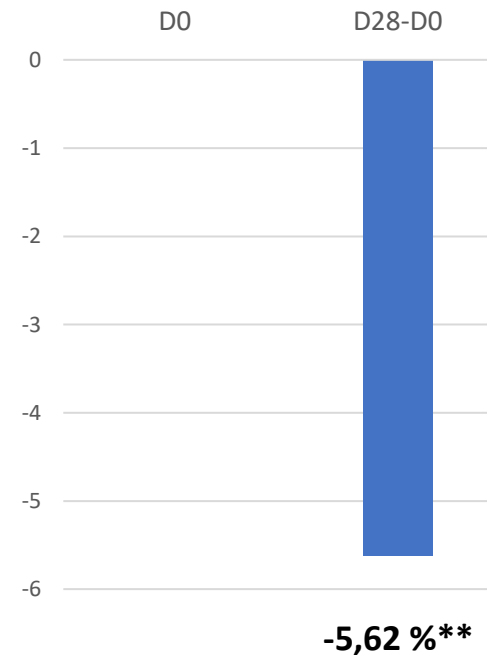
Crow's feet wrinkle volume



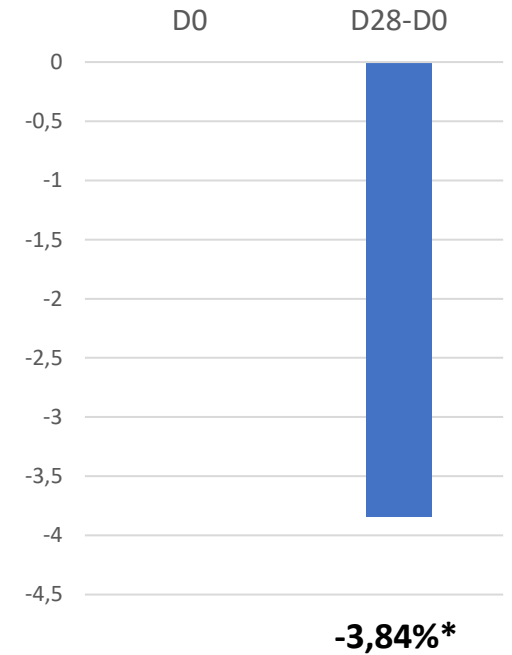
Crow's feet area



Visible spots area



Visible spots number



Insularia VF – Clinical study setup

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- Tested area: eye contour
- 2 applications/day
- Duration: 14-28 days
- Tested formulation: water-based gel
- Tested doses: 0.1-1.5%



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Conclusion

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The future is now...

- Sustainability in all its facets is a key driver in personal care.
- Vertical Farming offers major benefits, including water saving, energy efficiency, avoidance of land use, and highly reproducible culture protocols.
- We presented today two highly sustainable and effective botanical extracts.



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