



SAEOPA

Southern African Essential
Oil Producers' Association



South African Conference Essential Oils & Vegetable/Seed oils

The *status quo* of production in Southern Africa

KM Swanepoel

2019



SAEOPA

Contents

History leads to today's interests
= Tomorrow's outcome
Current production & Global positioning
Focus species for research and development
Pelargonium
Kalahari Melon
Provincial producers & Awards
Standards
Conclusion

Association since 2000

Thanks to
farmers/producers/entrepreneurs

There is oil

There is a presentation



The Founder Kleinste van Rensburg



SAEOPA

The Patron of the association



Dr Aubrey Parsons
Researcher
Formulator
Lecturer



Southern African Essential Oil Producers' Association



SAEOPA

Pioneers in Agriculture and Essential Oils



Within other industries

Medicinal Plants

Macadamia

Sugar Cane

Forestry

Avocado

Tobacco

Tourism

Maize

Citrus

Wine



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SAEOPA INVOLVED IN VIABILITY STUDIES ESSENTIAL OILS IN SOUTH AFRICA

FRIDGE study

Fund for Research into Industrial Development, Growth and Equity



National Economic Development
and Labour Council



the dti

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA



Institute of
Natural Resources



DEPARTMENT: AGRICULTURE

A PROFILE OF THE SOUTH AFRICAN ESSENTIAL OILS MARKET VALUE CHAIN

2010

Directorate Marketing
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www.daff.gov.za



agriculture,
forestry & fisheries

Department
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA



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ECONOMIC
DEVELOPMENT
PRACTICE

CAPE TOWN • LONDON
NEW DELHI • SÃO PAULO
DUBAI • WASHINGTON

FRIDGE
Chemicals Sector Summit
Preparation:

Information System Strategy
(Step 4)

23 March 2005



STUDY INTO THE ESTABLISHMENT OF AN AROMA AND
FRAGRANCE FINE CHEMICALS VALUE CHAIN IN SOUTH AFRICA
(TENDER NUMBER T79/07/03)

FINAL REPORT
(Submission Date: 15 September 2004)

Part Four
Report: Aroma Chemicals Derived from Essential Oils

STUDY CONDUCTED BY:

Triumph Venture Capital (Pty) Limited
In conjunction with Dr Lorraine Thiel and Mr Fadi Hendricks
("the Consultant")



AAMPS

Association for
African Medicinal Plants Standards

AFRICAN HERBAL PHARMACOPOEIA

Edited by:
Brenda T. Eloff JN, Gurib-Fakim A, Phillips LD

AAMPS

African Medicinal Plants Standards
www.aamps.org

Green Gold

Success Stories Using Southern African Plant Species



Edited by
Gurib-Fakim A, Brenda T, Phillips LD, Eloff JN

AAMPS Publishing
Association of African Medicinal Plants Standards

Plants, People & Nature
Benefit Sharing in Practice





TRADE INFORMATION BRIEF

ESSENTIAL OILS



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Oil Producers' Association

A STUDY INTO AND PREPARATION OF A STRATEGIC DEVELOPMENT PLAN FOR THE SOUTH AFRICAN ESSENTIAL OILS INDUSTRY



TIPS
TRADE INFORMATION PROJECT SUPPORT



Australian Government
AusAID

the dti

THE DEPARTMENT
OF TRADE AND INDUSTRY
SOUTH AFRICA

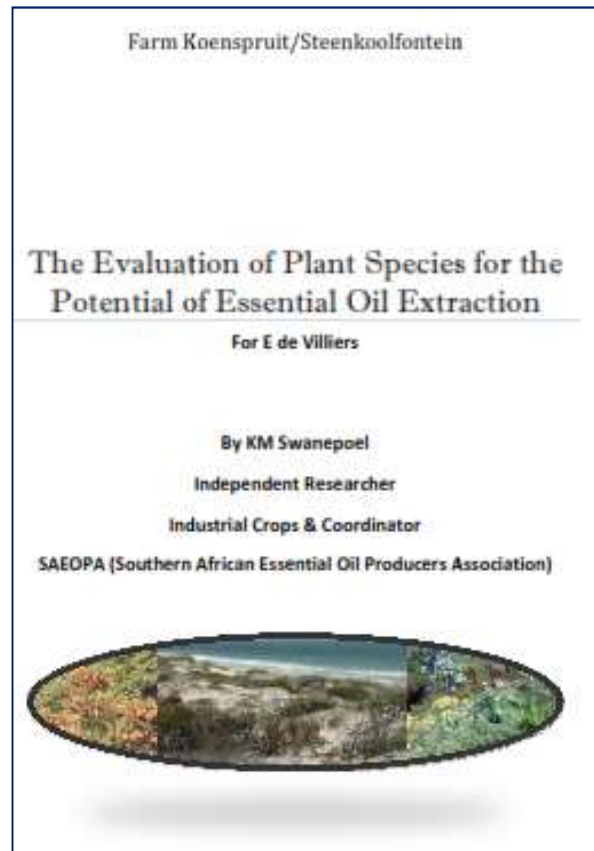
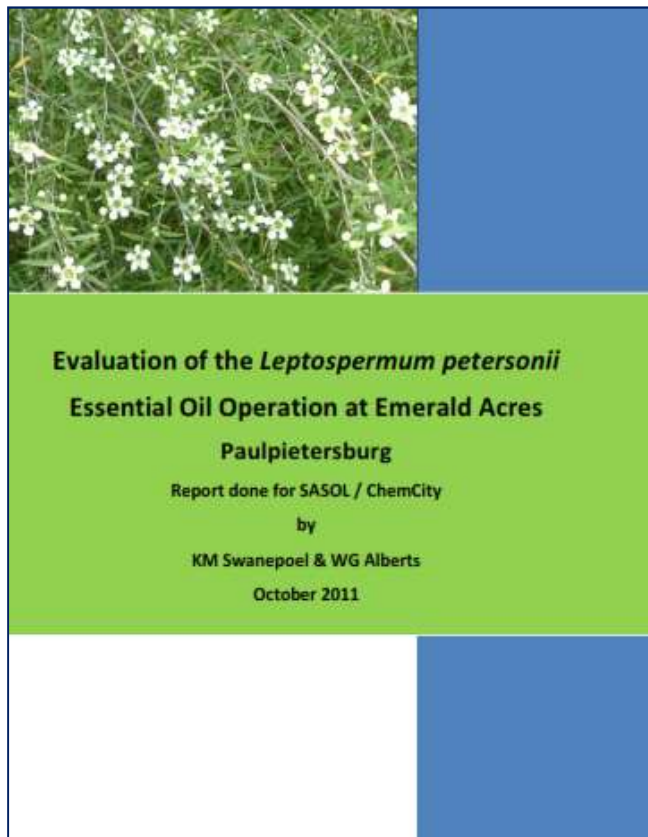


Agriman & Associates

Agronomatrix

1 December 2004

Farm visits, Plant Identification and Feasibility Studies



Zitholele Consulting
Reg. No. 2000/006392/07

PIETERMARITZBURG
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KARWIL CONSULTANCY

REPORT ON



Independent centre for Learning on LED
through Monitoring and Research

REVIEW OF THE ESSENTIAL OILS INDUSTRY IN SOUTH AFRICA

Report No : 8737/8657/1/Z

Submitted to:

Department of Water Affairs and Forestry
157 Schoeman Street
Pretoria
0002



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Participatory Assessment of Nkandla Essential Oils Value Chain



DISTRIBUTION:

3 Copies - Department of Water Affairs and Forestry
1 Copy - 8738

December 2006

8738

October 2007



EuropeAid/122028/D/SV/ZA
This project is financed by the European Union





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Recent Interests from abroad



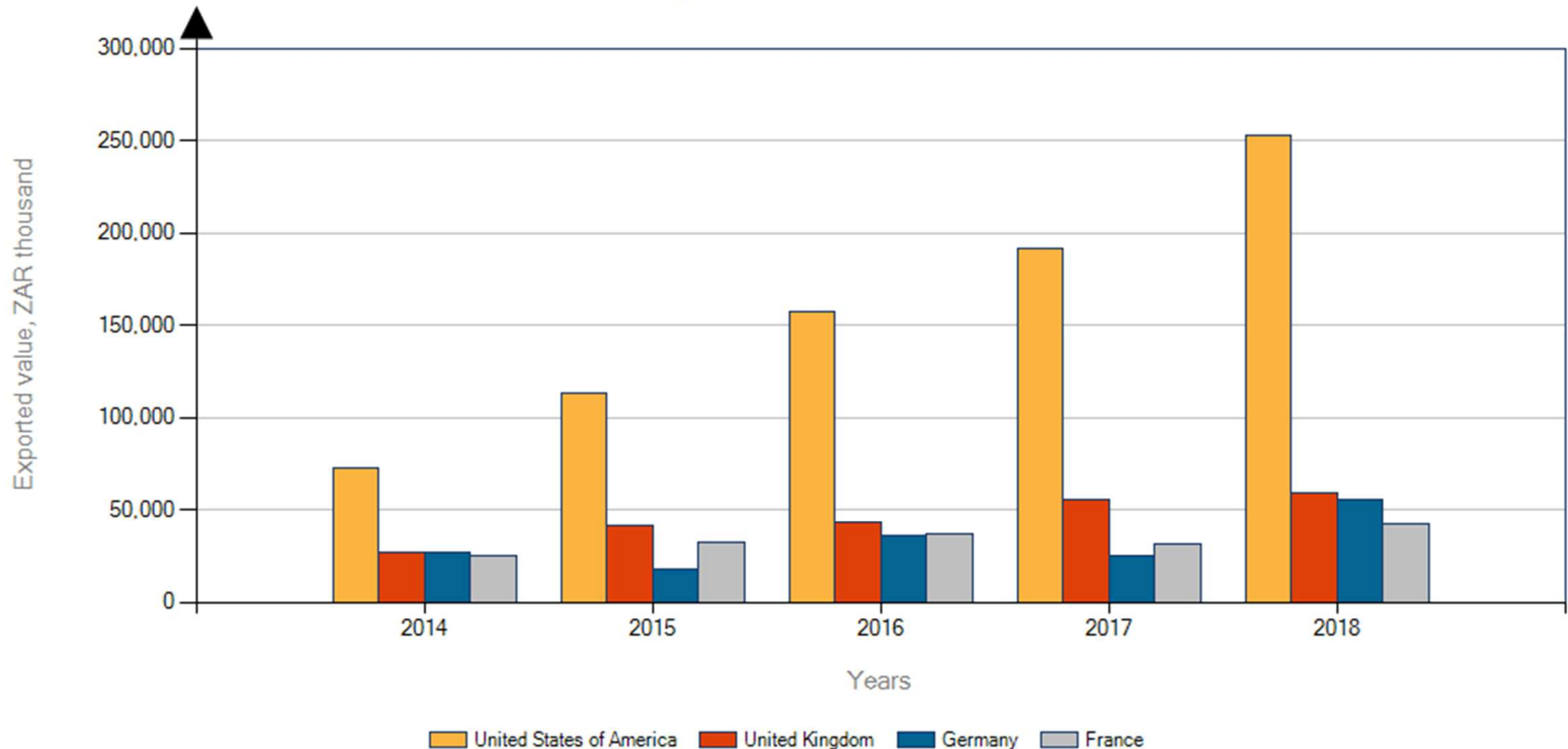
LAUNCH OF UNIDO PROJECT



Exports From South Africa

List of importing markets for a product exported by South Africa (Mirror)

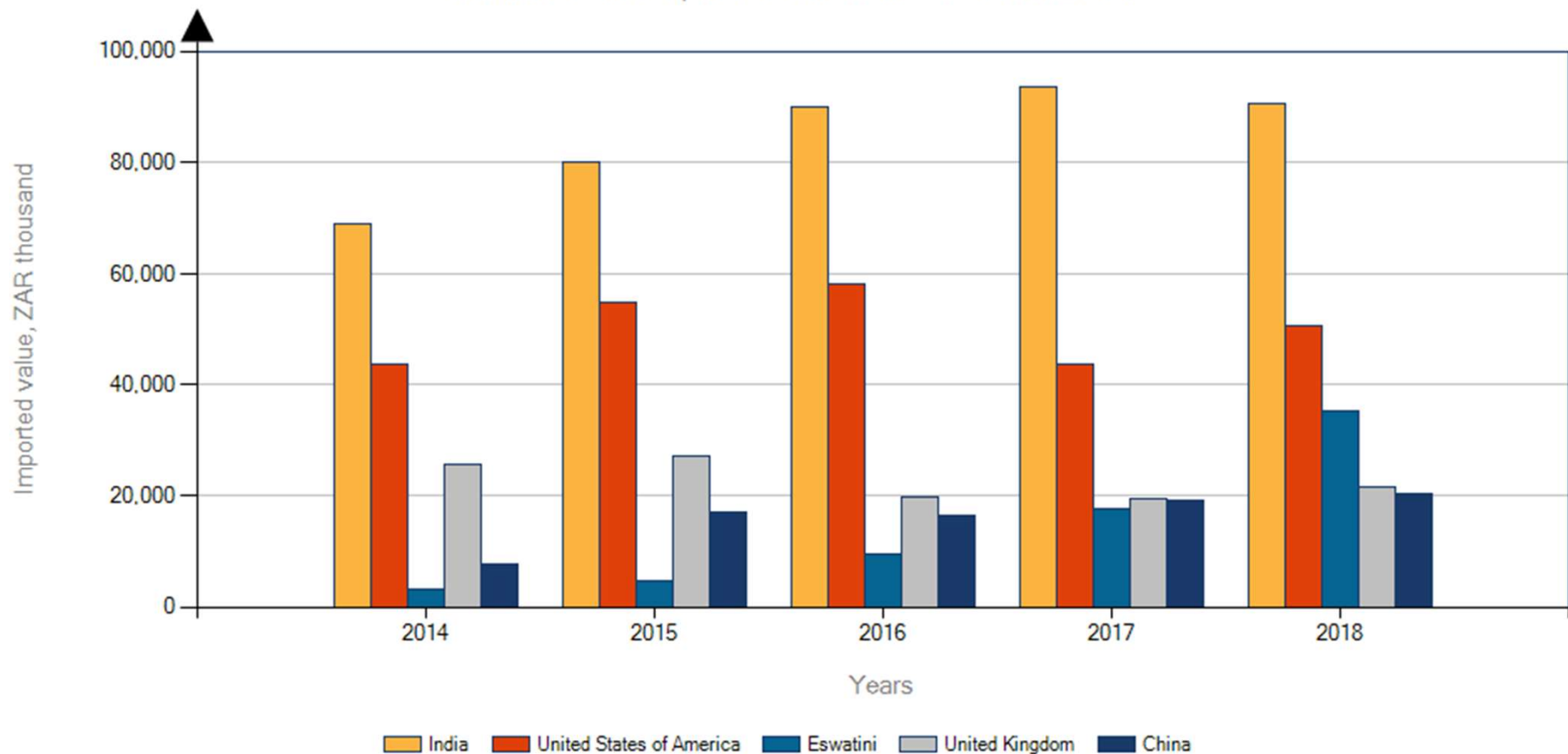
Product: 3301 Essential oils, whether or not terpeneless, incl. concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, fixed oils, waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils



Imported Essential Oils to SA

List of supplying markets for a product imported by South Africa

Product: 3301 Essential oils, whether or not terpeneless, incl. concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, fixed oils, waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils





ARTICLES

The Tradition that is Grass: An Account of the History of Grass that makes it a Perfumer's Treasure [page 18 - 24](#)

Scentational Forests: The Beneficial Effects of Forest Therapy [page 24 - 28](#)

The Future of Fragrance Farming: Instagrammable, Circular and in the Cloud [page 30 - 34](#)

Minty Moments: Dive into the Mint Story [page 42 - 48](#)

SOUTH AFRICA

[page 46 - 47](#)

Buchu Oil
Eucalyptus Smithii Oil
Lemon Oil
Marula Oil
Rose Geranium Oil
Tagetes Oil
Tea Tree Oil



Essential oils

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- They are high value products sold predominantly to the international fragrance, cosmetic, flavour and aromatherapy markets.
- Brazil, China, the USA, Egypt, India, Mexico, Guatemala, Morocco and Indonesia are the major producers of essential oils.
- **The EU dominates world trade but no single country here is a major producer.**
- **About 65% of world production comes from developing countries.**
- **There are approximately 160 essential oils traded globally.**
- **The top 10 oils make up some 80% of world trade.**
- **Therefore world trade in essential oils is divided into two components, referred to as the major and minor oils. Major oils are those oils traded in large quantities (but often lower prices).**
- **Recent studies have suggested that the value of the global essential oil market is set to reach USD 11.67 billion by 2022 (Ultra International B.V. 2016).**
- This growth is primarily based on a growing consumer awareness regarding the health benefits associated with natural and organic ingredients in personal care, beverages and household products.

Production and price

ULTRA INTERNATIONAL



SOUTH AFRICA



EUCALYPTUS SMITHII OIL

Eucalyptus smithii South Africa

E. Smithii has slowly and steadily nudged its way as a favoured substitute for other eucalyptus oils that face erratic supply issues. The demand for this oil continues to be on an upward trend, and is in short supply. Prices have seen a phenomenal rise in the last two years. However, currently with adequate available material, prices are expected to remain steady at this time.

USD 18.00 /kilo crude
USD 20.00 /kilo rect 80%
USD 22.00 /kilo rect 90%



LEMON OIL

Citrus limon (L.) Bernm. f. South Africa

South Africa has seen a rise in lemon cultivation and this has produced the desired result – an encouraging increase in lemon production. Though a large proportion of the country's newer orchards are still not in production, planting has continued, and total lemon production has soared. Compared to last year, this year South Africa has more than doubled its lemon crop to touch 473,000 MT. The market for lemon, however, are rather weak.

USD 18.00 /kilo



MARULA OIL

Sclerocarya birrea South Africa

The 2019 season opened with a note with adequate availability. The hair and skin care industry made breakthrough applications of marula oil, which has resulted in a healthy demand. The rise in prices this year was due to a surge in prices this year. The market for production have also seen a rise.

USD 15.00 /kilo



ROSE GERANIUM OIL

Pelargonium graveolens South Africa

2018 witnessed an increase in plantings and these will now bear fruit. The market is confident about the availability of additional material this year; but even this is expected to be limited. Reports of further crop trials in several different parts of the country have filtered in. As a result, there will be a marked increase in the annual supply but this is only an incremental hike at this stage. There is no change in the prices for this oil as compared to last year's rates.

USD 255.00 /kilo



TAGETES OIL

Tagetes erecta South Africa

A robust supply is on the cards for tagetes oil in 2019. The demand has been consistent and is on an even keel with essential oil supply. No shortages are anticipated this season and prices are expected to hold their position in the coming months.

USD 175.00 /kilo



TEA TREE OIL

Melaleuca alternifolia South Africa

In the global scenario, this oil commands a healthy demand. Market predictions point to an anticipated product shortage in 2019, especially for the organic material. But, there has been news of extensive plantings this year; and it is hoped that this will help tide over the projected shortage over the next couple of years.

USD 47.00 /kilo



BUCHU OIL

Agathosma betulina South Africa

2018 has not augured well for South African farmers. Severe wild fires and droughts have been the plague of the 2018 buchu crop. Supplies plunged drastically by over 50%, accompanied by a corresponding dramatic price hike. 2019 brings hope in terms of near-normal availability and easing of prices. In the face of unpredictability, it is always wise to cover any imminent requirements.

NA



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SOUTH AFRICA

- The current South African production of essential oils is approximately 2100 to 2900 tons per annum
 - Including eucalyptus and citrus
- Some initiative from several organizations e.g.
 - UNIDO, GIZ, SECO, SIPPO marketing support
- Good academia and good technology available
- Coordination improving
- Huge potential in difficult economy





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TRADITIONAL TRADING meets VALUE ADDING



Southern African Essential Oil Producers' Association



Main Oil Crops cultivated in SA

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STEAM DISTILLED

Indigenous

- Buchu
- Geranium
- Lippia
- Eriocephalus
- Artemisia
- Helichrysum
- Leonotis
- Coleonema
- Etc.

Exotic

- Eucalyptus
- Tagettes
- Lavender
- Mint
- Lemon grass
- Rosemary
- Tea tree

PRESSED/VEGETABLE OILS

Indigenous

- Marula
- Baobab
- Kalahari Melon
- Ximenia
- Trichelia
- Manketti/Mongono

Exotic

- Grape seed
- Citrus
- Avocado
- Macadamia
- Rose hip
- Passion Fruit
- Prickly pear
- Canola, soya, sunflower, cotton etc.



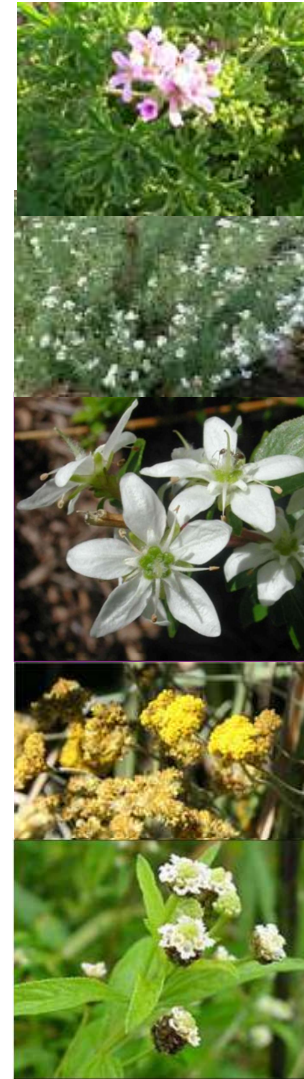
Vegetable/Seed Oil Cluster Of Five Species

- *Sclerocarya birrea* Marula
- *Adansonia digitata* Baobab
- *Citrullus lanatus* Kalahari Melon / t'sama
- *Schinziophyton rautanenii* Manketti /Mongongo Manketti / Mongongo in English - manketti nut, mongongo nut, \ !Kung San - //xa, mongongo Lozi - mungongo Shona - mungongoma Tswana - mongongo, mugonga Herero - mangetti, mongongo Kwangali - ugongo (ngongo) Afrikaans - wilde okkerneut
- *Ximenia americana*: Kleinsuurpruim (Afrikaans), sour plum/tallow wood (English), cerise de mer (French), habbuli (Fulani), and mtundakala (Swahili),
- *X caffra*: large sourplum (Eng.); grootsuurpruim (Afr.); umThunduluka-obmvu (Zulu); Morokologa (Northern Sotho)



Cluster Of Five Species Essential Oil

- *Pelargonium var Rose* / Rose Geranium
- *Eriocephalus punctulatus*/ Cape Camomile/ Rosemary, Kapokbos, Igaga
- *Agathosma crenulata* and *A betulina* /Buchu /Boegoe
- *Helichrysum spp* Imphepho (SS, X, Sw, Z),
 - kooigoed (A), Ingqunisa (Z)
- *Lippia javanica* and others ; Zinziba, Beukesbossie, koors bossie, maagbossie, lemoenbossie, laventelbossie, fever tea, lemon bush. musukudu, bokhukhwane (Tswana), inzinziniba (Xhosa), umsuzwane (Zulu), mumara (Shona)





Essential Oils

-  **Buchu Oil**
-  **Cape Chamomile Oil**
(Snow Bush)
-  **Helichrysum Oil**
(Everlasting, Impaphe)
-  **Lippia Oil**
(Lemon bush)
-  **Rose Geranium Oil**

Vegetable Oils

-  **Baobab Oil**
-  **Kalahari Melon Oil**
-  **Manketti/ Mongongo Oil**
-  **Marula Oil**
-  **Sour Plum Oil**

To strengthen the essential and vegetable oils value chain systematically, it is important to know where in South Africa the species are grown, as well as their respective characteristics. This profile of the species will facilitate the development of appropriate technical assistance to SMEs based on the type of habitat in which the species grow, and the map is unique, providing public knowledge for the industry and any other stakeholder interested in cultivation and/or harvesting of these species to produce essential and vegetable oils.

Map of Essential and Vegetable Oil production in South Africa

Most essential oil crops produced in South Africa are grown mainly in Eastern Cape, KwaZulu-Natal, Lowveld regions of Limpopo and Mpumalanga, and Western Cape. The South African production season is different to that of the Northern Hemisphere competitors, giving a seasonal comparative advantage. The map visually depicts the locations in which the respective essential and vegetable oils are grown in South Africa, including habitat of that region.





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Provincial survey

	Rose Geranium	Rosemary	Lemon grass	Moringa	Lippia	Helichrysum	Eucalyptus	Tea tree lemon scented tea tree	Other
Northern Cape	X								Lavender
Western Cape	X	X			X	X	X		Buchu Lavender
Eastern Cape	X	X	X	X	X	X		X	Aloe, Cape chamomile
Free State		X				X			Lavender Rose Yarrow Camomile
KwaZulu Natal	X	X	X	X		X	X	X	Medicinal plants
Mpumalanga	X	X	X	X	X		X		
Limpopo	X		X	X	X	X	X	X	Passion fruit seed oil Marula Baobab
North-west	X	X							Kalahari Melon
Gauteng	X	X		X	X	X			Tagette



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CURRENT PRODUCTION IN SA

Cottage industry
Commercial farmers

Community projects
Contract farming

Co-operating
producers in clusters



Mango's and geranium



A photograph of a garden bed demonstrating intercropping. The bed is filled with rows of plants. Tall, green, grass-like plants are planted in rows, and between them are rows of leafy green vegetables, possibly spinach or lettuce. The plants are growing in a well-maintained garden bed with visible soil paths.

INTERCROPPING with VEGETABLES

Geranium ready for harvest
at flowering stage



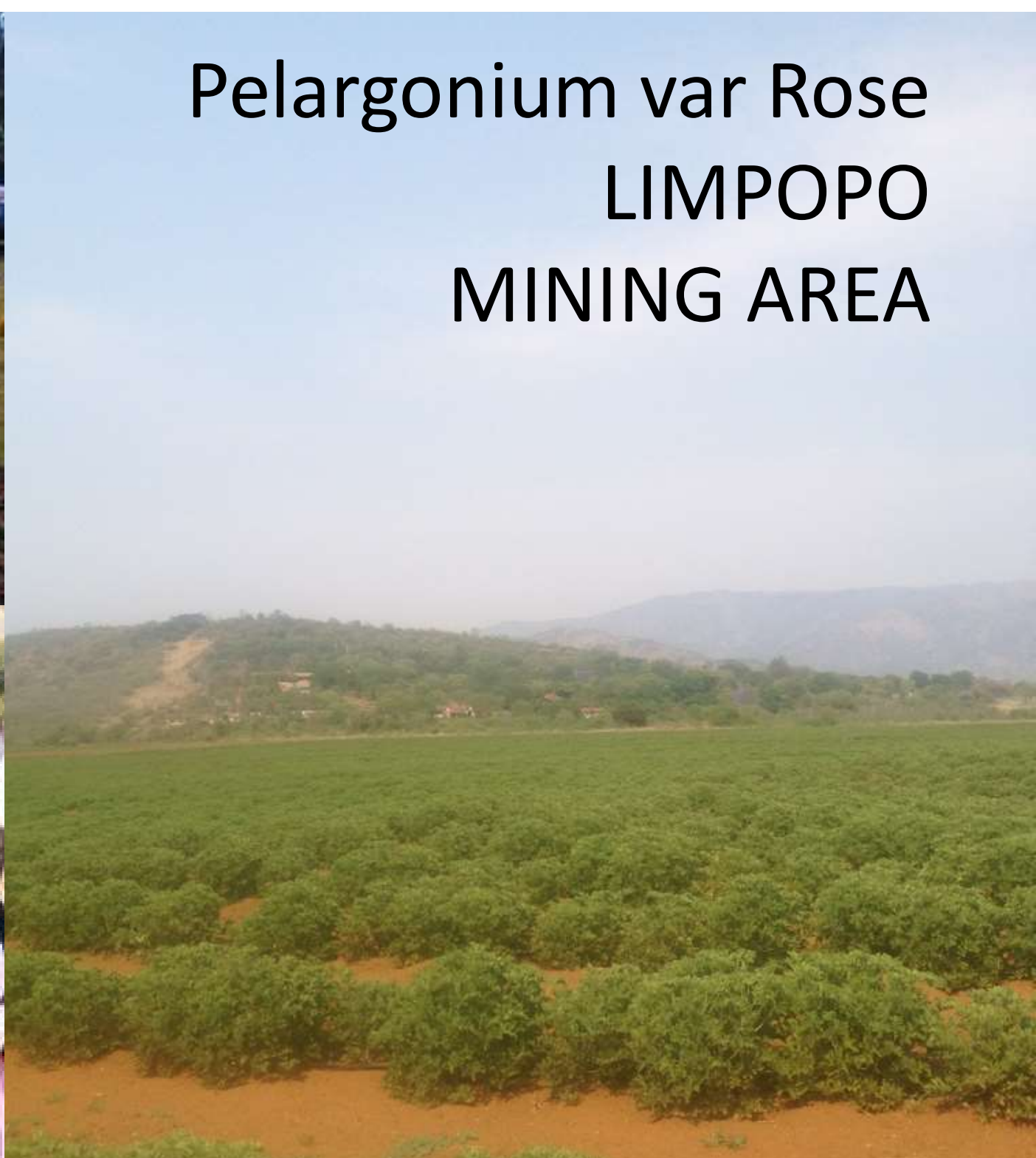
A photograph of a vast, lush green field filled with low-lying, dense vegetation. In the background, several tall, thin wooden posts are visible, possibly part of a fence or support structure. The sky is bright and clear.

**SHARING
ENSURE CO-OPERATION
DOUBLING SUCCESS!**

Pelargonium var Rose

LIMPOPO

MINING AREA





PARTNERSHIP PRODUCER AND PROCESSOR



Southern African Essential Oil Producers' Association



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LIMPOPO BOTANICA BULBINE



Southern African Essential Oil Producers' Association



SAEOPA

Marula harvest



Southern African Essential Oil Producers' Association

A landscape photograph showing a tea plantation in the foreground and middle ground, with a large, forested hill in the background. The tea bushes are arranged in neat rows on a sloping hillside. The background hill is covered in dense, green forest. The sky is clear and blue.

Tea tree in Forestry LIMPOPO

LIMPOPO
BELA BELA
Passion fruit seed oil
PASTILO OIL





Start up groups for Moringa awaiting funding in LIMPOPO





Job creation and skills development at Hi Hanyile



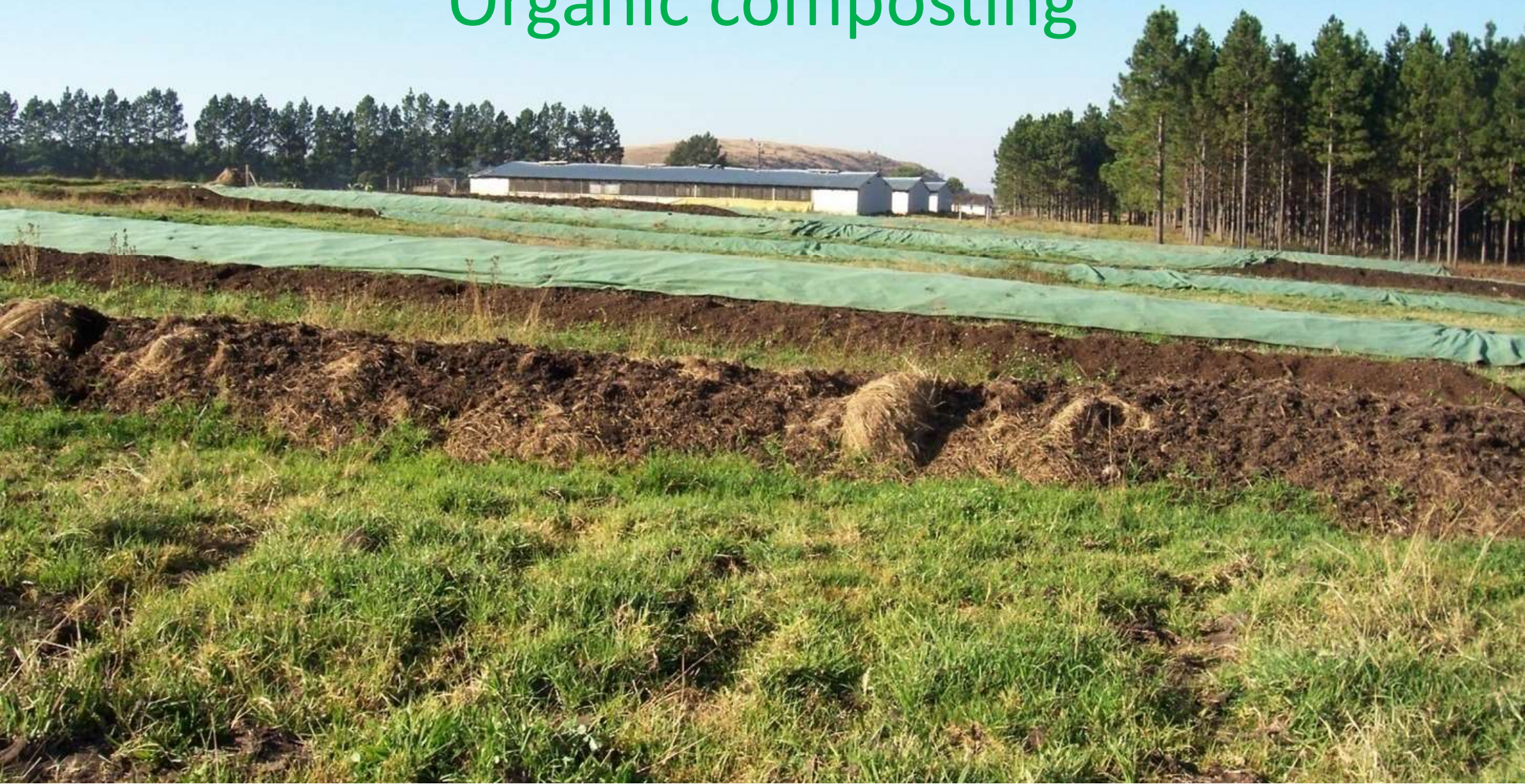
Baobab products by ECOProducts



KZN EMERALD ACRES

Lemon Scented and tea tree

Organic composting



KZN Paulpietersburg

Emerald Acres

Citrus, Essential oils of tea tree and
lemon scented tea tree.

All organically!



AGRI-TOURISM



Nkandla distillation unit



High quality products from organic methods WESTERN CAPE







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AWARD WINNERS UP TO DATE



- **Trevor Steyn** from African Organics Africa Organics Kalahari Melon Body Wash took the honours in both the Individual Product category as well as the Overall Winner category at the Pharmaceutical & Cosmetic Review / IFF New Product Competition Awards Function on the 17th October 2013. KWAZULU NATAL
- **Lilly Msweli** From Eshowe finalist in Toyota harvest of the year competition 2010 Geranium production. KWAZULU NATAL
- **Julia Shungube** As the 2015 winner of both the Mpumalanga and national legs of the Female Entrepreneur Awards Programme, received total prize money of R750 000 for Castor oil. Also Female farmer of the year. MPUMALANGA
- **Flip Minnaar** from Highland Essential Oil HIVOS Most promising initiative 2018 Rose and Pyrethrum as well as Piper oil. FREESTATE
- **Peter Pech** from Busby It won the Best Body Oil in Irelands 2012 Image Beauty Awards twice receiving the honorable export award from President Nelson Mandela in first time in 1994. KWAZULU NATAL
- **Phyllis Mphogo** was awarded distillation units by SASBO and Limpopo Agricultural and Rural development. LIMPOPO



**TEMOTHUO UNVEILING OF
DISTILLATION UNIT
IN LIMPOPO**

MPUMALANGA, Tonga Castor Oil in need of manufacturing equipment and electricity



And the winner is: HIGHLAND ESSENTIAL OILS



A photograph of a woman standing in a field of green, low-lying crops. She is wearing a light-colored jacket and a green skirt. The background shows a hilly landscape with some trees and a clear sky. The text is overlaid on the lower half of the image.

LILLY MSWELI FINALIST IN
TOYOTA
HARVEST COMPETITION
2010



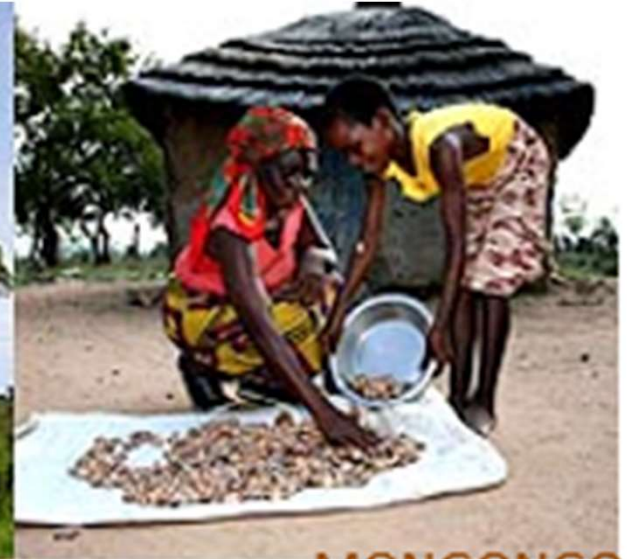
Cosmetics : Nut case of BIG 5,6, 7



MAFURA



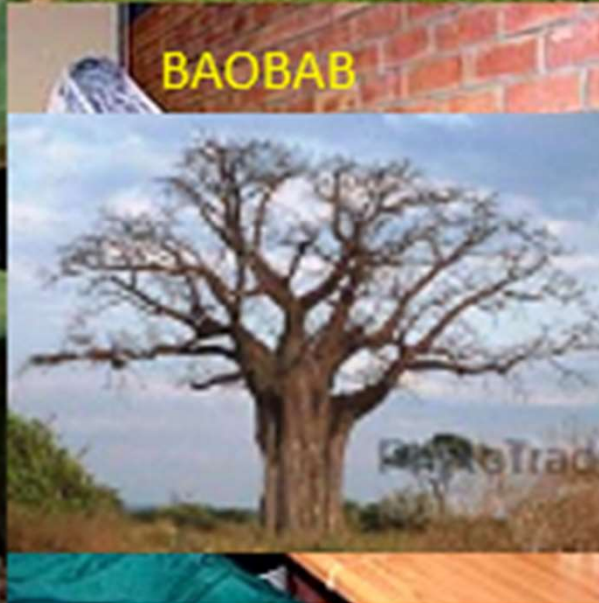
MARULA



MONGONGO



XIMENIA



BAOBAB



KALAHARI MELON



SAEOPA

North West Province

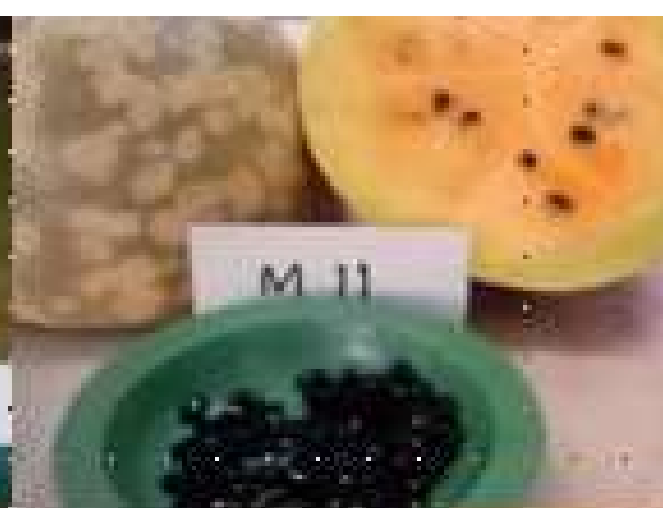
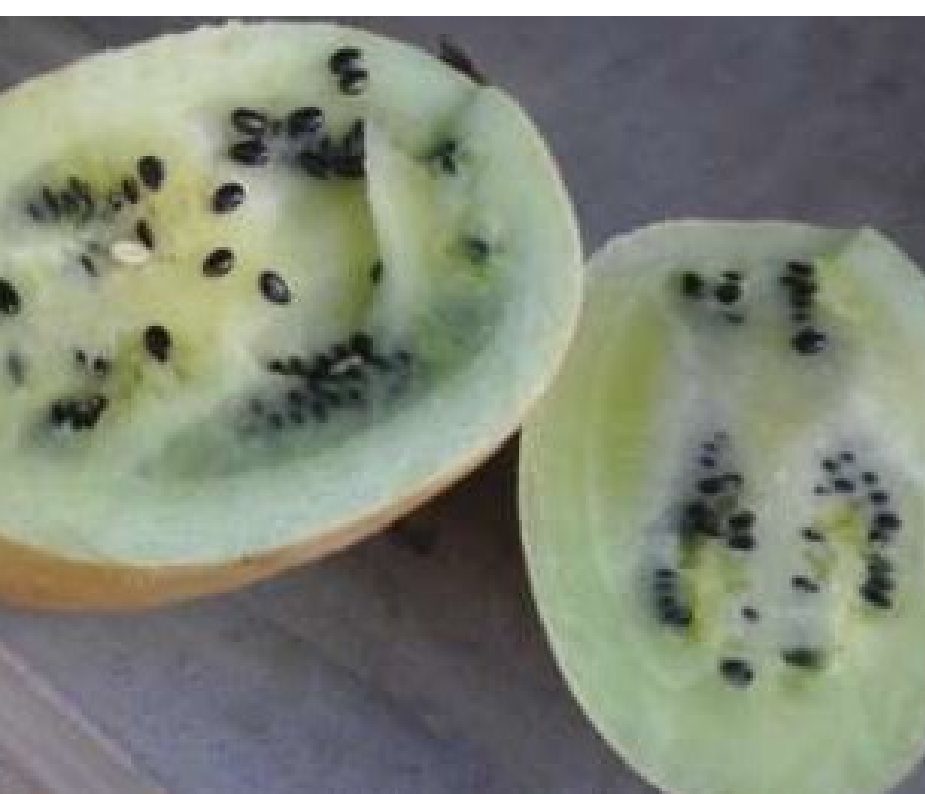
Citrullus lanatus (Kalahari Melon), drought survivor





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NORTH WEST Harvesting GAUTENG Processing





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Comparison of quality tests

Kalahari Melon Quality control for marketing	African Seed oils publication 1 <u>Vermaak et al</u>	North West 1 press result Kalahari melon	"Karkoer 2" Kalahari Melon	"Maketaan" Kalahari Melon
Refractory index	1.47	1.474	1.473	1.673
Density	0.09	0.919	0.920	0.919
Free fatty acid value		1.26 	0.53 	0.43 
Peroxide value	2.3-7.51	2.81 	10,78 	6.99
<u>Saponification</u> value	73.20-204.01	191.7	189.06	180.42
Iodine value	119.0-125.0	133.22	131.9	126.6
<u>Myristic acid</u>	0.78			
<u>Palmitic acid</u>	6.8-15.7	8.67 	9.07 	9.57 
Oleic acid	13.03-17	9.16 	11-05 	15.72
<u>Linoleic acid</u>	56.8-70.8	72.65	67.59	61.06



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Kalahari Melon discussion

The North West Kalahari Melon showed highest Linoleic Acid Value important for most buyers together with high saponification value and lowest peroxide value but lower in Oleic acid.

It can be seen as a food grade oil and is comparable to soya, palm and peanut oil. Standards have to be set for the oil used in food, cosmetics, or hair products.

It has the potential to fill the gap in the market for cosmetics where Argan and Palm oil is used currently and under pressure.

More tests of comparison are needed in future for quality control.

The seeds of the melon variety which produced oil could be tested genetically to proof of the exact origin.

Due to the high demand for the oil for cosmetics, further tests and studies are needed and selections should be done for optimal cultivation and production.





HIGHLAND
FREE STATE





Harvesting and collecting Tagete







Agriculture students investigating alternative crops



Packaging and Labeling





Labelling

Drums strapped to pallet

Wellness farm and spa





VOLUME is VOICE

**Commercial producers supporting
new entrants**



SAEOPA

TESTING AND COMPARING



Tshwane University
of Technology

FACULTY OF SCIENCE

Department of Pharmaceutical Sciences

31 October 2012

To: Karen Swanepoel
SAEOPA

Certificate of analysis for of Geranium essential oil (area > 1%)

Compounds	% Area	
	Rose Geranium X	Rose Geranium Y
cis Rose oxide	0.4	0.7
Isomenthone	7.8	5.7
β -Bourbonene	0.4	0.6
Linalool	4.8	2.4
Guaia-6,9-diene	0.7	3.0
Citronellyl formate	7.9	10.7
Geranyl formate	5.0	6.6
Neral	0.7	0.8
Geranial	1.8	1.3
Citronellol	29.7	29.7
Geraniol	19.4	19.5
Total	78.6	80.8

Analysing conditions: Agilent GC-MS (GC 6890N / MS 5973) system operating under the following conditions; Column: HP-Innowax (60 m x 0.25 mm id., 0.25 μ m film thickness) helium as carrier gas; Temperatures: injection port 250 °C, column 60 °C for 10 min, 4 °C / min to 220 °C, 220 °C for 10 min, 1 °C / min to 240 °C (total = 80 min). Split ratio was adjusted to 200:1. The MS were taken at 70 eV. The mass range was from m/z 35 to 550. Data was recorded after a 7.5 min lag phase. Component identifications were made by comparing their mass spectra and retention indices using commercial libraries and a in-house library Relative percentage amounts were calculated from the FID chromatogram.

Prof AM VILJOEN

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viljoenam@tut.ac.za



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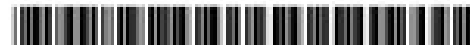
TESTING AND DOCUMENTING

	Madagascar	Limpopo	High Lands	W Cape	E Cape	Australian	Indian	Egypt	China
10-EPI-GAMMA EUDESMOL		0,96	1,03	1,18	0,55				
ISOMENTHONE	2 - 12	4,66	4,6	3,64	2,61				
LINALOOL	4 to 14	5,07	3,51	2,86	4,03				
CITRONELLOL	16-23	23,3	26,83	26,4	25,9	31		32	39
GERANIOL	7 to 17	10,33	11,36	8,94	12,7	9,8			
Sensory EVALUATION		Dry note	close to Madagascar	Heavier, less fresh. Minty not.	Herbal, artichoke, cooked notes			sharp	organic
		Camomile	Heavier notes	Second to Madagascar					
price per kg	€ 230					not € 200 available		€ 90	€170– 180
R		1800	2500	2500	1800				



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The time for standards is now.
If we do not do it, others will.



USPP20149P2

(12) **United States Plant Patent**
Saxena et al.

(10) Patent No.: **US PP20,149 P2**
(45) Date of Patent: **Jul. 7, 2009**

(54) **NEW AND DISTINCT SOMACLONAL VARIETY OF ROSE SCENTED GERANIUM**

(58) **Latin Name:** *Pelargonium graveolens*
Varietal Denomination: *Parinaal*

(75) **Inventors:** Gauri Saxena, Lucknow (IN); Suchlita Banerjee, Lucknow (IN); Laliq ur Rahman, Lucknow (IN); Gopal Rao Mallavarapu, Lucknow (IN); Srikanth Sharma, Lucknow (IN); Suman Prati Singh Khanna, Lucknow (IN); Sushil Kumar, Lucknow (IN)

(73) **Assignee:** Council of Scientific and Industrial Research, New Delhi (IN)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** 06/533,592

(22) **Filed:** Mar. 30, 2009

(51) **Int. Cl.**
A01M 5/00 (2006.01)

(52) **U.S. Cl.** P16/024

(58) **Field of Classification Search** P16/024
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

PP17,422 P2 * 2007 Westell P6/032

OTHER PUBLICATIONS

MPBP Chapter 1600—Plant Patents; 11 pages.*

* cited by examiner

Primary Examiner—Kent Bell

(74) **Attorney, Agent, or Firm**—Abelstein, Freyze & Schwab

(57) **ABSTRACT**

A new and distinct somaclonal variety of rose scented geranium *Pelargonium graveolens* christened 'Parinaal' characterized by distinct morphology and improved oil yield determining parameters.

7 Drawing Sheets

1

Field

2

and the Bourbon or the Roule quality of geranium oils; these are given the names *Pelargonium graveolens* cv. Herant and *Pelargonium graveolens* cv. Bipak, respectively. The cultivar Herant was found to be more adaptive than the cultivar Bipak both in the hilly regions as well as in



International Organization
for Standardization

Store Standards catalogue Browse by ICS 71 71.100 71.100.60 ISO 4731:2012

ISO 4731:2012

Preview

Essential oil of geranium (*Pelargonium* x spp.)



This standard was last reviewed and confirmed in 2018. Therefore this version remains current.

ISO 4731:2012 specifies certain characteristics of essential oil of geranium (*Pelargonium* x spp.) coming from different *Pelargonium* species, commonly known as *Pelargonium graveolens*, in order to facilitate assessment of its quality.

General information

Current status: Published

Publication date: 2012-12

Edition: 3

Number of pages: 9

Technical Committee: ISO/TC 54 Essential oils

ICS: 71.100.60 Essential oils

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standard

Format Language

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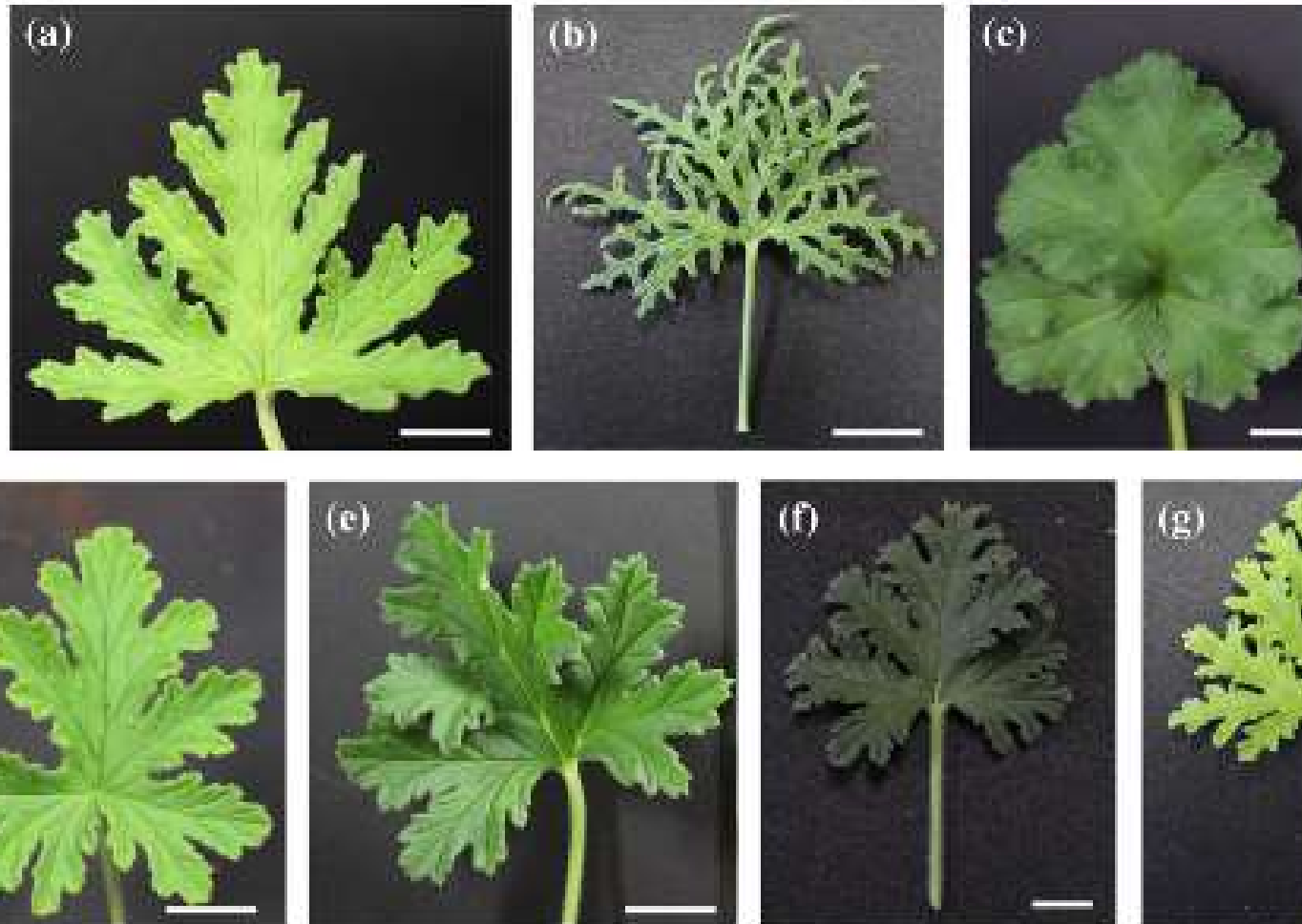


Fig. 4 Scented *Pelargonium* species or cultivars leaves a *P. graveolens*; b *P. radens*; c *P. capitatum*; d *P. x hybridum* cv. 'Rosat Egypt'; e *P. x hybridum* cv. 'Rosat Bourbon'; f *P. x hybridum* cv. 'Rosat Chine'; g *P. x hybridum* cv. 'Rosat Grasse'; Scale bars 10 mm

EGYPT



RWANDA



**MADAGASCAR
& REUNION**



CHINA



INDIA





**SOUTH AFRICA'S
OWN STANDARD**

K M Swanepoel



INDIA



EGYPT

5-4-2004



ORIGIN OF ROSE GERANIUM

Pelargonium



betulinum

11

Camphoreous

Lalli et al. (2006)

capitatum

11

Rose

Demarne et al. (1993), Viljoen et al. (1995a, b)

citronellum

11

Lemon

Demarne and Van der Walt (1993)

crispum

11

Lemon, lime

(Lalli et al. 2006)

cucullatum

11

Spices

Lalli et al. (2006)

denticulatum

11

Lemongrass

Unpublished result

glutinosum

11

Balsamic

Lalli et al. (2006)



graveolens

11

Mint

Van der Walt and Demarne (1988),
Lis-Balchin (1991)

hispidum

11

Fruity

Lalli et al. (2006)

papilionaceum

11

Lemon

Lalli et al. (2006)

quercifolium

11

Nutmeg, spices

Widmer and Collins (1991)

pseudoglutinosum

11

Balsamic

Lalli et al. (2006)



radens

11

Mint

Van der Walt and Demarne (1988),
Lis-Balchin (1991)

scabrum

11

Apricot, lemon

Lalli et al. (2006)

scabroide

11

Soap

Lalli et al. (2006)

tomentosum

11

Mint

Hefendehl (1972), Demarne et al. (1986),
Fuchs et al. (2001)

vitifolium

11

Lemon balm,
lemongrass

Demarne and van der Walt (1992)



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Standards, for what? FOOD STANDARD COSMETICS

SAFETY AND ECONOMY

General lack of standards of products in Africa

Poor documentation and certifications

Prices low, the demand is high

Cosmetics is small by fast growing

- Species not always botanically correct
- Cultivation and GMP
- Quality control and safety measures monitored
- Collection and harvesting methods
- Transport and storage
- Processing
- Containers
- Labelling
- Regulations – over by government and under regulated for quality
- Performance to justify standards
- Exporting requirements



SAEOPA

STANDARDS IN SA ON THE WAY



the dti

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State Secretariat for Economic Affairs SECO



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



SABS

South African Quality Institute

The word quality brings to mind terms such as inspection, process control, auditing, standards and ISO 9000.

Southern African Essential Oil Producers' Association

Transfer of technology in Rural Community projects

Special Tribute to ARC





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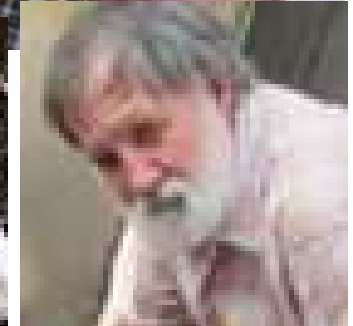
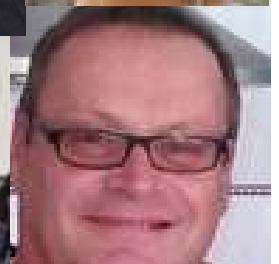
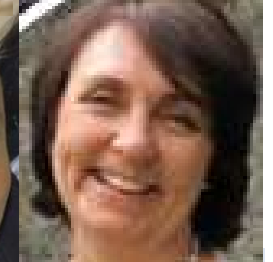
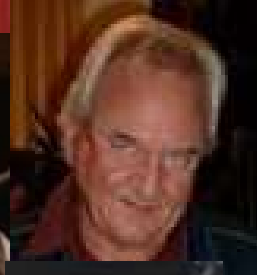
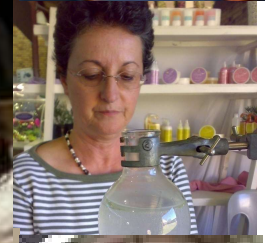
Proudly South African Engineering



e.g. EDESA and DESTEK

Southern African Essential Oil Producers' Association

Tribute to Local Essential oil and vegetable oil researchers





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CONCLUSION



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Thank you for your time

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AND STANDARDS PROGRAMME