AFRICA’S NATURAL RELIEF FOR Colds, Flu AND Respiratory TrACT InfectioNs

PELARGONIUM
S I D O I D E S

NATURAL COLD & FLU BUSTER

AFRIGETICS
OUR VISION
Our vision is to identify and develop new medicines from the vast botanical resources in Southern Africa.

OUR VALUES
We honour the inherent value of African medicinal herbs. We respect nature and strive to employ the best practices in sustainable wild harvesting. We strive to uplift the communities we work with by developing profit sharing and skills development partnerships with indigenous people.

OUR MISSION
Afrigetics wish to introduce to world to the immense healing power of African botanical resources. We are committed to developing commercially viable ingredients and developing strong supply chains to deliver our product to the international wellness market.
MESSAGE FROM OUR CEO

Pelargonium is proven to reduce the duration and severity of the common cold.

In this brochure I want to introduce you to our flagship product, Pelargonium sidoides, a plant that has significant commercial and healing potential in the world of natural cold and flu phytomedicines.

As the CEO of Afrigetics I look forward to developing partnerships that ensure our mutual success through doing business in a way that is ethical, innovative and dynamically responsive to the continually changing needs of our global natural products marketplace. Our goal is to be the trusted experts in the supply of pelargonium sidoides to the global marketplace and to offer you a reliable and accredited supply chain with our range of innovative pelargonium products.

Steve Hurt
Owner & Director
Afrigetics Botanicals

Why should you be interested in Pelargonium sidoides?

#1
Clinically Proven
Over 20 clinical trials and many other studies have been done on pelargonium sidoides and the results are outstanding.

#2
Commercial Success Stories
The commercial success records of Koloba™ and Umcka ColdCare™ with reported sales of over EUR80 m in 2006 alone.

#3
Market Growth
Sales for the cough, cold, flu, and allergy remedy market reached $7.5 billion in 2017, a 6.2% increase from 2016.
Afrigetics is rooted in African ethnopharmacology. We are experts in traditional medicinal knowledge and our team maintain strong ties with local plant users. We are leaders in sustainable harvesting and diligent partners with rural harvesters. Afrigetics is committed to combining twentieth century innovation with ancient African indigenous knowledge. Our products are backed-by-science, Afrigetics has research partnerships with a number of South African universities. We have a proven track record as reliable exporters and are pioneering novel processing techniques to bring our clients tailor-made raw materials and extracts.

Afrigetics is driven by superior quality, we believe our standards of food safety set us apart. Our cutting edge research facility focusses on stringent quality control. Afrigetics has invested in a state of the art processing facility, incorporating FSSC 22000 accreditation. This Food Safety System Certification demonstrates our company’s robust and effective management system. Our reliable team are well positioned to meet the requirements of regulators, food business clients and consumers. In addition, Afrigetics are licenced distributors of indigenous flora and FDA registered.

Afrigetics is a leading exporter of Southern African medicinal herbs. Our award-winning team prides itself on providing superior African healing plants to the international market.

Afrigetics are passionate about discovering, protecting and developing African botanical wisdom. We are poised to unlock the tremendous potential of African medicinal herbs and bring these resources to a global platform. We wish to share the success of the African pharmacopoeia with the world and we believe the star of our medicine chest is undoubtedly the African pelargonium. Afrigetics seeks to empower our clients to reap the benefits of these valued botanicals in their products, thus enabling others to share in the healing power of nature.

“We believe that the botanical resources of Africa may hold the key to the treatment of major medical and health ailments and, we want to be at the forefront of these discoveries...”
PRECIOUS PELARGONIUM

Africa’s natural relief for colds, flu and respiratory tract infections.
Pelargonium sidoides is a small and humble shrub that grows abundantly in the sun warmed, stony soil of the South African Eastern Cape and Lesotho grasslands. Known locally by its common name, African geranium, it can be found nestled beneath tall grasses and aromatic floral neighbours on coastal slopes. The small indigenous herb has soft, velvety textured grey-green leaves and dark magenta coloured flowers. This insignificant looking plant however contains a treasure trove of medicinal compounds and has been part of local healing practices for millennia. Pelargonium is an example of nature’s immune boosting and pathogen fighting power. It is celebrated as Afrigetics Botanicals’ flagship commercial herb.
The drug is listed in the European and African Pharmacopoeia and has European approval as a herbal medicine and food supplement. Schwabe’s withdrawal of the patents for this medicine in 2010 has allowed other pharmaceutical companies to follow suit and explore the potential of this natural remedy.

The original hunter gatherer inhabitants of Southern Africa, the Koi-San, knew of this herb and used it for the treatment of diarrhoea and dysentery. Knowledge of the small bush later fell into the hands of the Cape Dutch colonists, who christened it Rooirabas, perhaps for its red tinted tuberous roots. Herdsmen dubbed the plant “Kalverbossie”, meaning ‘calf bush’ and used the woody twisted underground rhizomes to treat stomach complaints in their animals. It served in Cape herbal medicine as a tonic for weakness, fatigue and in the treatment of gonorrhoea.

The ethnobotanical potential of African Geranium was brought to Europe in the early 1900’s after a young explorer called Charles Henry Stevens was treated in South Africa for his pulmonary tuberculosis by a local healer. A bitter tea made of the roots of the plant drove his illness into remission. He then used the Umckaloabo herb to develop “Stevens’ Consumption Cure” and marketed it in England. It wasn’t until the 1970’s, well after Steven’s death that the plant ingredient of his remedy was identified as Pelargonium.

In the 1990’s, a German drug manufacturer, Schwabe Pharmaceuticals, developed a highly popular herbal cough syrup called “Umckaloabo” containing liquid extract Eps7630. In 2006, this company sold more than EUR80 million of this pelargonium based product. The drug is listed in the European and African Pharmacopoeia and has European approval as a herbal medicine and food supplement. Schwabe’s withdrawal of the patents for this medicine in 2010 has allowed other pharmaceutical companies to follow suit and explore the potential of this natural remedy.
Currently *P. sidoides* is listed on the Red Data List of South Africa’s species as of ‘least concern’, they state that less than 5% of the local population is being impacted by harvesting (Red Data List, 2017). Even so, strict controls by the South African Department of Environmental Affairs require collectors to obtain a bioprospecting licence. Within the constraints of the Biodiversity Act, KP Botanicals identifies areas of wild cultivation and trains harvesters in rural areas to identify and collect the *Pelargonium*. Care is taken to prevent overharvesting of the underground tuberous roots and so to provide a supply for posterity, protect the herb from extinction and to provide an ongoing livelihood for local collectors.

Many of the collectors subcontracted by KP Botanicals are elderly members in their communities with rich traditional knowledge of indigenous plants. Harvesters actively propagate the plant material as it is collected, by breaking off aerial shoots and replanting the cuttings. They leave the deeper, more mature roots in the soil, to allow for rapid regrowth after harvesting. In addition to supplementing their income, and under the stipulations of the Biodiversity Act, local collectors and land owners profit from a benefit sharing agreement where a rand value of their harvest is paid into a government controlled ‘Bioprospecting Trust Fund’ for distribution within the community.

Afrigetics Botanicals recognises that despite its best efforts, currently well managed wild stocks may be subject to depletion in the future and are actively working with the University of Stellenbosch towards refining a cultivation system for *P. sidoides*. Plant breeding practices will be used to identify cultivars with the highest levels of active ingredients and grow these on specialized farms in the Eden District using ecological cultivation methods.

With this aim in mind, our partners have entered into a benefit sharing agreement with the indigenous communities of Southern Africa who harvest our herbs through a network of 350 families. Furthermore, as licensed collaborators of a bioprospectors permit, we are poised to continue unlocking the potential of Africa’s Green Gold, for many years to come.
Traditional herbal medicinal product for the symptomatic treatment of the common cold

Pelargonium acts by preventing bacteria from sticking to the cells lining the respiratory system and by stimulating white blood cells to attack and destroy these invading bacteria. The chemicals contained in this medicine also help to support the immune system by producing specific proteins, called defensins, to protect cells from invasion. The antiviral properties of *P. sidoides* lies in its ability to stimulate the body’s cells to produce interferon, a chemical that ‘interferes’ with virus replication. Its antibacterial effect is attributed to chemicals in the extract causing the tiny hair-like projections which line our respiratory tract, called cilia, to beat faster and to expel mucus. In addition, chemicals found in the plant have a mucolytic effect, helping to dissolve thick mucus in the airways.

There is no cure for the common cold, since it is spread by a virus, but Pelargonium has been proven to aid healing. This herbal medicine has been shown to be safe and effective and may form an important alternative to antibiotics.

Many pharmaceutical companies use ethanol to extract the active ingredients from the pelargonium root. These extracts have proven effective for the treatment of respiratory tract infections including bronchitis, tonsillitis, sinusitis and the common cold. Clinical trials have shown the medicine to reduce both the duration and severity of these illnesses. One such preparation, Eps7630, prepared by Schwabe Pharmaceuticals has been the subject of over 20 clinical studies, involving 9000 people.

Pelargonium’s success as a cold and flu buster is unsurprising as over half of general practitioner’s visits involve patients complaining of upper respiratory tract infections. Adults can suffer from as many as four colds annually and young children get up to 12 times per year. It is considered to be the single largest cause of work and school related absenteeism. Antibiotics are generally considered to be ineffective for most cases of colds and flu, yet treatment is clearly needed.

The dried rhizomes of *P. sidoides* contain a host of chemical compounds. Among these are polyphenols including gallic acids. Polyphenols are a group of plant chemicals which give foods a bitter taste, represent potent plant defence chemicals and often act as powerful antioxidants. Root extracts are rich in coumarins, including a unique phytochemical called ‘umckalin’. In addition, the remedy contains powerful flavonoids including quercetin, catechin and gallocatechin. These plant nutrients are responsible for vivid colour in fruit and vegetables and have anti-inflammatory and immune boosting properties.
THREE-WAY EFFECT

Pelargonium has been shown to have a three-way effect on health.

ANTIBACTERIAL

The Pelargonium Sidoides extract prevents bacteria from attaching to cells in mucous membranes.1

Pelargonium sidoides extracts inhibit the adherence of bacteria such as Streptococcus pyogenes and Helicobacter pylori to epithelial cells in vitro.

Furthermore, ciliated cells isolated from the nasal epithelium enhanced their ciliary beat frequency in the presence of these extracts, which should allow a better removal of excess mucous and bacteria.

ANTIVIRAL

Similarly, Pelargonium Sidoides prevents viruses from attaching to the mucous membrane cells and stimulates the body’s immune system in such a way that both bacteria and viruses are prevented from multiplying.1

In vitro, the extracts show efficacy against cellular infections with influenza virus, HSV, EMCV, RSV, coronavirus, parainfluenza virus, and coxsackie virus, and this appears to be mainly mediated indirectly by inhibition of virus attachment and spreading.

EXPECTORANT

The extract acts as an expectorant, allowing the body to expel contaminated mucous, making conditions less suitable for the multiplication of the bacteria and viruses – can only find animal data.

The three-way effect attacks the acute infection at its root, the stabilisation of the immune system prevents a re-infection and the vicious circle of infection, a short recovery phase and new infection is broken.

The efficacy of the Pelargonium sidoides extract against a number of bacterial and viral infections has been well researched. This extract has been the subject of over 20 clinical studies involving more than 9,000 patients, including children as young as one year (Brown, 2009). It has been shown to safely and effectively treat acute upper respiratory tract infections such as bronchitis, tonsillitis, pharyngitis, sinusitis and the common cold. The following is a summary of some of the clinical data available:

**Tonsillitis**

Professor V.V. Bereznoy MD, treated over 140 children with bacterial tonsillitis in a placebo-controlled trial in Kiev in 2003. His treated approximately half the children with Eps 7630 (manufactured by Schwabe Pharmaceuticals) and the remainder with a placebo. The children took 3ml of the extract per day for 6 days. Researchers in this study monitored pain, difficulty swallowing, salivation, redness, fever and headache, using a ‘tonsillitis severity score’. Bereznoy’s study confirmed the superiority of Pelargonium sidoides extract compared to the placebo. The study demonstrated the ability of Pelargonium sidoides extract to reduce the severity of all five symptoms, shortened the duration of the illness and protected patients from complications. Rapid recovery was observed in three quarters of the patients treated with Pelargonium sidoides extract and a third of those treated with the placebo.

Bereznoy (2003) points out that more than half of the Pelargonium sidoides extract group were able to get out of bed after two days of treatment. In the placebo group, however, more than half the patients were either still in bed on day 4 or had abandoned the study because of a lack of efficacy. This reduction in bed rest of 48 hours under Pelargonium sidoides extract, compared with the placebo, shows the benefit of this treatment. Indeed, it is more than double the reported benefit of antibiotic treatment at 16 hours (Del Mar, 2001). Six days after beginning treatment, 80% of the Pelargonium sidoides extract group were back at school, whereas only 20% of the placebo group were able to resume school (Bereznoy et al, 2003).

**Bronchitis**

Matthys et al, (2003) studied the efficacy of Pelargonium sidoides extract in adults with acute bronchitis. The group of researchers conducted a randomized, double-blind, placebo-controlled trial on over 450 patients. This study found that Pelargonium sidoides extract was superior in efficacy compared to placebo in the treatment of adults with acute bronchitis. Treatment with Pelargonium sidoides extract clearly reduced the severity of symptoms, duration of the illness and shortened the time taken off work by nearly 2 days (Matthys et al, 2003).

Further observational studies by Haidvogl and Heger (2007) examined the effect of Pelargonium sidoides extract...
extract on over 740 children with acute bronchitis. The researchers monitored treatment with the herbal extract for up to 14 days. Five 'bronchitis specific symptoms' were summed up to give an overall measure of disease severity. Haidvogl and Heger concluded that Pelargonium sidoides extract is a safe and effective treatment for acute bronchitis. In addition, they note that in 88.3% of cases, the responsible physician rated the treatment as successful. Adverse events were minor and transitory.

Sinusitis

A randomized, double-blind, placebo-controlled study of 103 adult patients with acute sinusitis was conducted by Bachert et al at 11 clinics, in Kiev, in 2009. The patients were studied for 21 days and assessed on 6 symptoms of sinusitis including headache, nasal obstruction and discharge. Bachert et al (2009) report that by day 7, 63% of the Pelargonium sidoides extract group were back to work compared with 37% in the placebo group. By day 21, sinus x-rays were normal in more than 90% of the Pelargonium sidoides extract group compared with 10% for the placebo group. The researchers highlighted “improvements shown in the patients’ health-related quality of life, activity level and general well-being”, they further observed a quicker return to work. Bachert et al (2009) conclude that “Pelargonium sidoides extract should be considered as a possible first line treatment even in patients suffering from an acute rhinosinusitis of presumably bacterial origin”.

Common Cold

Lizogub, Riley and Heger (2009) examined the efficacy of Pelargonium sidoides extract on patients with the common cold, one of the most prevalent illness in the world. The study compared Pelargonium sidoides extract to a placebo over 10 days. Over 100 patients were tracked according to their cold symptoms including; nasal discharge, sore throat, nasal congestion, sneezing, hoarseness, cough, headache, muscle aches, and fever. Lizogub, Riley and Heger (2009) report that Pelargonium sidoides extract represents an effective treatment for the common cold. After 10 days, 78.8% of the Pelargonium sidoides extract group was clinically cured compared with 31.4% in the placebo group. The Pelargonium sidoides extract group returned to work on average of 2 days earlier than the placebo group.

In conclusion, clinical trials have shown that P. sidoides extract is an effective treatment for a number of upper respiratory tract infections. Kolodziej (2011) points to the reasons for its therapeutic effects; antibacterial activity, antiviral activity, immune stimulation and an increase in ciliary beat frequency.

BIBLIOGRAPHY

acute, self-limited viral infection causing upper respiratory symptoms (ie cough, sore throat, etc.)

Sudden, forceful expulsion of air from the lungs to clear material from the airways and to protect the lungs from particles that have been inhaled.

Type I reactions underlie atopic disorders developing < 1 h after exposure to antigen.

Inflammation of the sinuses, most commonly caused by a viral or bacterial infection or an allergy.

Inflammation of the nasal mucous membrane.

Acute inflammation of the lungs caused by infection.

Acute inflammation of the lungs caused by infection.

Acute, self-limited viral infection causing upper respiratory symptoms (ie cough, sore throat, etc.).
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>COMPOSITION</th>
<th>ULTRACALE</th>
<th>USES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIECES</td>
<td>Shredded whole pelargonium root</td>
<td>NLT 100ppm</td>
<td>Further processing</td>
</tr>
<tr>
<td>MILLED POWDER</td>
<td>Dark brown to reddish granular powder milled from dried pelargonium root</td>
<td>NLT 100ppm</td>
<td>Further processing for extracts and tinctures</td>
</tr>
<tr>
<td>FREEZE DRIED EXTRACT</td>
<td>Dark brown to reddish free flowing powder</td>
<td>NLT 200ppm</td>
<td>Further processing for liquid extracts or for use in capsules/tablets</td>
</tr>
<tr>
<td>TINCTURE ETHANOL</td>
<td>Dark brown to reddish opaque liquid with ethanolic smell, containing 16-19% ethanol</td>
<td>NLT 30ppm</td>
<td>Single ingredient for the formation of herbal medicine</td>
</tr>
<tr>
<td>TINCTURE GLYCEROL</td>
<td>Dark brown to reddish opaque liquid with syrupy viscosity</td>
<td>NLT 30ppm</td>
<td>For the formulation of cough syrups or herbal medicines</td>
</tr>
<tr>
<td>COUGH SYRUP</td>
<td>Dark brown to reddish opaque-liquid with syrupy viscosity and mint flavor</td>
<td>NLT 30ppm</td>
<td>Ready to use Vegetable glycerine based cough syrup.</td>
</tr>
<tr>
<td>POWDER EXTRACT</td>
<td>A dry powder extract standardized for umckalin content</td>
<td>160ppm / 800ppm / 1100ppm</td>
<td>Used as an ingredient in formulations for liquid drops, cough syrups or sprays and can also be pressed into tablets or encapsulated</td>
</tr>
</tbody>
</table>

AFRIGETICS

PELARGONIUM SIDOIDES

PRODUCTS

Organic certified
Pelargonium sidoides Whole, Dried Pieces

**PRODUCT DESCRIPTION**
Dark brown to reddish pieces of shredded whole pelargonium root, cut and sifted according to customer specification.

**ACTIVE INGREDIENT**
Not less than 100ppm umckalin

**STERILIZATION**
Steam sterilization (Optional)

**PACKAGING DESCRIPTION**
INNER PACKAGE - 2 PVC plastic liner (Food grade)
OUTER PACKAGING - White polypropylene agricultural weaved bag

**PACK SIZE**
15kg raw material

Sustainably Wild Harvested, Organic Certified (Optional)

Pelargonium sidoides Milled Powder

**PRODUCT DESCRIPTION**
Dark brown to reddish powder made from dried whole pelargonium root with a particle size <10% retained on a 425 micron sieve

**ACTIVE INGREDIENT**
Not less than 100ppm umckalin

**STERILIZATION**
Steam sterilization (*Optional)

**PACKAGING DESCRIPTION**
INNER PACKAGE - 2 PVC plastic liner (Food grade)
OUTER PACKAGING - White polypropylene agricultural weaved bag

**PACK SIZE**
20kg raw material
Pelargonium sidoides Powder Extract

**PRODUCT DESCRIPTION**
Pelargonium sidoides powder extract

**FEATURES**
A dry powder extract standardized for umckalin content. This powder can be used as an ingredient in formulations for liquid drops, cough syrups or sprays and can also be pressed into tablets or encapsulated.

**ACTIVE INGREDIENT**
160ppm, 800ppm and 1100ppm Umckalin

**PACKAGING DESCRIPTION**
Foil gusset bag, ziplock closure

**PACK SIZE**
1kg and 5kg bags

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Pelargonium sidoides Freeze-dried Powder

**PRODUCT DESCRIPTION**
Pelargonium sidoides freeze-dried powder, ultrasonically extracted. (Solvent-free extract)

**FEATURES**
An ultrasonic extraction of pelargonium which has been freeze-dried. The benefits of this product are that it is solvent-free and the antioxidant properties of the plant are preserved by freeze-drying. This extract also contains the whole plant so it has a wider spectrum of all actives present in the pelargonium plant. This powder can be used as a starting material for extractions in order to produce greater yields of active ingredient due to the fact that it is standardized for 200ppm umckalin and because the cells have been ruptured by ultrasonic extraction which means that the actives are more easily drawn out of the plant material during extraction. It can also be used as an ingredient in powder formulations or pressed into a tablet or filled in a capsule.

**ACTIVE INGREDIENT**
200ppm Umckalin

**PACKAGING DESCRIPTION**
Foil gusset bag, ziplock closure.

**PACK SIZE**
1kg and 5kg bags
Afrigetics offers liquid extracts of *Pelargonium sidoides* with varying levels of active ingredients and solubility, depending on our customer requirement. All extracts are manufactured for us by certified facilities, audited under our FSSC 22000 program.

**Ethanolic Liquid Extract 1:8-10**

**PRODUCT DESCRIPTION**

Pelargonium sidoides ethanolic extract 1:10 (Alcohol 16-19%)

**FEATURES**

An ethanolic extract made according to the pharmacopoeia monograph on *Pelargonium sidoides*. This tincture can be used as an ingredient in formulations for liquid drops, cough syrups or sprays.

**ACTIVE INGREDIENT**

30ppm umckalin (or to customer specification)

**PACKAGING DESCRIPTION**

PVC bucket with tamper-proof closure. 5l or 25l

**Glycerine Extract**

**PRODUCT DESCRIPTION**

Pelargonium sidoides vegetable glycerine tincture

**FEATURES**

A non-alcoholic, sugar-free extract of *Pelargonium sidoides*. This tincture can be used as an ingredient in formulations for liquid drops, cough syrups or sprays.

**ACTIVE INGREDIENT**

30ppm umckalin (or to customer specification)

**PACKAGING DESCRIPTION**

PVC bucket with tamper-proof closure. 5l or 25l

**Cough Syrup Formulation with Mint**

**PRODUCT DESCRIPTION**

Alcohol-free and sugar-free. Pelargonium sidoides vegetable glycerine tincture

**FEATURES**

A non-alcoholic, sugar-free extract of *Pelargonium sidoides*. This tincture can be used as an ingredient in formulations for liquid drops, cough syrups or sprays.

**ACTIVE INGREDIENT**

30ppm umckalin (or to customer specification)

**PACKAGING DESCRIPTION**

PVC bucket with tamper-proof closure. 5l or 25l
In striving to continually improve our services we have now gone the extra mile to ensure that our palletization is truly world class. Our company offers packaging solutions that will withstand the toughest journeys by road, air or sea. Better packaging of your goods means fewer troubles further down the line by reducing the exposure to moisture (especially on sea cargo), damage by poor third party handling and general accidents that can occur during transit. Speak to us about your packaging requirements and we will listen to your every need.

### PALLETIZATION

<table>
<thead>
<tr>
<th>Dimensions of 1 Pallet (cm)</th>
<th>Weight per Pallet (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 (H)</td>
<td>MAX 500 KG</td>
</tr>
<tr>
<td>110 (W)</td>
<td></td>
</tr>
<tr>
<td>100 (L)</td>
<td></td>
</tr>
</tbody>
</table>

Shrink wrapped & strapped

Our company offers packaging solutions that will withstand the toughest journeys by road, air or sea.
Afrigetics Botanicals is export ready. Since June 2008 we have successfully delivered over 900 consignments by air, sea and courier to North America (USA, Canada), South America (Brazil, Argentina), West Europe (Germany, France, Italy, UK), Eastern Europe (Ukraine, Russia), Asia (China, Korea) and the Middle East (Iran).

Our logistics training is compliant with INCOTERMS 2010 and we have substantial experience in all aspects pertaining to the export process - which is faithfully carried out by VDM Cargo Solutions.
Franco van der Merwe, owner of VdM Cargo Solutions started his career at Customs in 1991 as auditor in the Excise department followed by a stint as a Customs import inspector before entering the private sector.

Over the past 27 years he has gained valuable experience in all aspects of imports and exports, from framing entries to heading up operations for a major clearing and forwarding house in South Africa.

His passion for the industry and his clients ultimately led him to start VdM Cargo Solutions.
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