



Message from the NSTF Executive Director

Traditional medicine and innovation to bring relief to COVID-19 patients

A mere two weeks since I drafted this article and we are in a new and perilous phase as a country. (I have had to revise the draft again.) The numbers of coronavirus infections and COVID-19 deaths are soaring. The Eastern Cape is experiencing the same as those regions in the world where COVID-19 outbreaks were handled badly, its hospitals already overrun and in crisis, and even the mortuaries struggling to keep up. See the article of 30 June in [Daily Maverick](#). Our worst nightmares? And yet even worse is coming, as the pandemic grows in other provinces, Gauteng overtakes the Western Cape as epicentre and the decades-long neglect of the health care system across the country bears its bitter fruit.

What a painful situation. We know that in countries that had a sudden spike of infections, demand for emergency treatment exceeded supply, forcing doctors and nurses to make life-and-death decisions and select those who would get priority treatment. South Africa is experiencing this very scenario at this moment. The hard lockdown measures taken to flatten the curve were intended to buy time to get the health system ready for the deluge of cases, but our health care system has been limping along for so long, no lockdown could never be enough to ready it for this race to the top of the peak.

For a change, perhaps the most fortunate people in South Africa are those in deep rural areas, where the virus spreads slowly, and the curse of isolation becomes a blessing. However, it will have to be seen whether this is the case, given the neglect of health care in those areas too, the lack of water and the shortage of ambulances and transport in general.

There is no cure nor vaccine against COVID-19. This means that other than hospital treatment for the worst cases, for most people who get ill, the only possible treatment is symptomatic. What can these thousands of ill people with flu-like symptoms take as effective symptomatic relief? Are wealthier people stock-piling over-the-counter medicines?

I started reading up on traditional remedies for flu symptoms and found a wealth of information in *People's Plants – a guide to useful plants of southern Africa*, by Ben-Erik van Wyk and Nigel Gericke (2018). There is a plethora of traditional treatments for the flu. None of which, of course, will cure viral infections, but since the main aim is symptomatic relief, it is worth trying those medicines that have undergone safety tests.

Disclaimer: There are currently no drugs licensed for the treatment or prevention of COVID-19, as the [World Health Organisation \(WHO\)](#) makes clear: "While several drug trials are ongoing, there is currently no proof that hydroxychloroquine or any other drug can cure or prevent COVID-19."

People's Plants lists all the plants that are commonly used by the people of South Africa for various purposes, including those used as medicinal herbs. These are mostly found growing wild in the veld or forest, and few are cultivated or processed so that they can appear on the shelves of modern shops – although some of the plants are, and can now be found in the ingredients of health shop herbal medicines. I looked for plants that can reportedly be used for relief of fever, cough, sore throat, diarrhoea, asthma, pneumonia and tuberculosis. I have left out the remedies that depend on smoking the plants, because anything that is smoked is harmful to the lungs.

A further disclaimer: I do not have medical training of any kind, and the list of medicines below cannot be guaranteed to work or to be safe for use. Where scientific indications of efficacy were explicitly referenced, I've repeated them here, but those too are mostly not scientifically endorsed for effectiveness or safety.

Medicinal innovation

My purpose is to highlight some of those plants that could be scientifically studied for the properties of their parts and the molecules that have a demonstrated chemical effect which leads to beneficial effects on the body and in treating diseases. The remedies could lead to commercialisable products, as has been the case with some traditional treatments.

While I drafted this (on Youth Day), the news of a breakthrough in medicine for use against COVID-19 broke on Sky News. It was discovered by scientists in the United Kingdom, that dexamethasone, a common medicine for the treatment of various conditions, including asthma, chronic obstructive lung disease, and tuberculosis, can reduce deaths among ventilator patients with COVID-19. The clinical trial was conducted within a record three months. The discovery is excellent news, and confirms that investigating medicines that are commonly used could lead to the discovery of those that could relieve the suffering of COVID-19 patients and possibly save lives.

The Department of Science and Technology (now known as the [Department of Science and Innovation \(DSI\)](#)) has long been concerned about the loss of traditional knowledge, and established a knowledge management system to capture indigenous knowledge before it is lost. One of its strategic focus areas has been and still is biotechnology, and the Department has invested in the R&D of traditional herbal products. In particular, the [Biomanufacturing Industry Development Centre \(BIDC\)](#) at the CSIR was established to “translate biomanufacturing concepts and technologies into market-ready products and services. The facility offers competency throughout the value chain, from laboratory scale validation through to technology prototyping and pilot manufacture”. Products and spinout companies have resulted from this initiative, as well as other initiatives, demonstrating that South Africa can achieve much by studying indigenous plants and developing related products, processes and businesses.

People's Plants contains detailed lists of traditional tonics (Chapter 8) that might strengthen immunity, and Part 1 has an extensive list of Foods and Beverages. I do not go into these in detail, but there is substantial overlap with plants used for their medicinal properties.

Traditional healers' role in the response to the pandemic

In the introduction to chapter 7, 'General medicines', some important points are raised concerning the context in which the medicines are used. It is pointed out that indigenous African medicine co-exists with various other medicinal groups or practices for example herbal medicines from other countries, as well as Western allopathic medicine. Indigenous medicines are often not used exclusively – as demonstrated by the Sangoma Gcinani Bango who went to consult a medical doctor when he contracted COVID-19. (Article in Health24, 11 June 2020) - [Sangoma wants to be Covid-19 ambassador after recovery from coronavirus infection](#). Bango now intends educating others about COVID-19, and believes there should be more cooperation between government and traditional healers to overcome the coronavirus pandemic.

President of the Traditional Healers Association in the SADC region, Dr Sylvester Hlathi, says traditional healers and their patients have been left out of the national pandemic response.

"As sangomas, we treat and heal people. But unfortunately, we were left out from the onset as we were not deemed as essential service providers by government," he says.

Hlathi already said in March that Traditional Healing Practitioners (THPs) are important stakeholders in society and should be informed and equipped with personal protective equipment. He said THPs will help government “fight this monster” of COVID-19, but they feel excluded. The Department of Health has issued guidelines for traditional health practitioners for dealing with COVID-19 and lockdown, but only in May.

Chemistry or holistic therapy?

Another point that is made in the introduction to Chapter 7 of *People's Plants*, is that traditional and herbal remedies from a variety of origins have this approach in common: that they are not part of the “reductionist perspective of Western science”, where only the chemical effects of medicine are valued. The spiritual and symbolic aspects of medicine are of great importance, thus blurring the lines between science, psychology and religion. Van Wyk and Gericke anticipate that there will eventually be “unifying therapeutic principles” to bring the various medicinal practices closer together. This is a discussion for another time.

As for scientific evidence – the chemistry of plants is complex, so that it is never a trivial task to study it and the effect of various plant-derived molecules in the human body. “To date no pure isolated southern African plant compound has been developed into a marketed drug, but a few phytopharmaceuticals [made from plant extracts] have been developed or are in the process of being developed”. There is great potential for innovation in this time, when there is a growing interest among scientists to do research on African medicinal plants, and new substances are being sought for R&D leading to pharmaceutical products.

Here is my selection of 20 possible sources of symptomatic relief for influenza and COVID-19, in alphabetical order:

1. *Adansonia digitate*, also called **baobab** or **kremetartboom** (Afrikaans): the fruit pulp is used for treatment of fever and diarrhoea, and is high in vitamin C. It has been commercialised as a food in recent years. The bark has also been used for treatment of fever.
2. *Athrixia phylicoides*, **mountain tea**, best known as the source of bush tea: is used for coughs, vomiting and diarrhoea.
3. *Ballota africana* – also known as **kattekruid** (Afrikaans) is a Khoi medicine. It is used for many diseases or conditions, including fever, flu, asthma, and as an expectorant. It is sometimes tied to the head to relieve headache.
4. *Capparis tomentosa*, or **woolly caper bush**: a very popular traditional medicine in southern Africa, which is used (among many other conditions) to treat headaches, coughs, pneumonia, and tuberculosis.
5. *Cinnamon camphora*, the **camphor tree**: the bark is used for fever, colds, flu and abdominal discomfort. The wood is a natural source of camphor, which has antiseptic activity. Antibacterial and antifungal activities have been demonstrated.
6. *Conyza scabrida*, **bakbos** or **oondbos** (Afrikaans) and **isavu** (Xhosa): the leaves are used for inflammation, fever and pain.
7. *Crinum macowanii*, **unduze** (Zulu): Decoctions of the bulb are taken for tuberculosis. *Crinum bulbiserratum* is used by the Basotho for colds.
8. *Dichrostachys cinerea*, **sickle bush** or **sekelbos** (Afrikaans): The authors call it “an important medicinal plant in southern Africa”. In Zimbabwe root infusions are used for coughs and pneumonia.
9. *Dicoma capensis*, **wilde karmedik**, or **koorsbossie** (Afrikaans): one of the “most popular remedies for fever...influenza ... and diarrhoea”.
10. *Dodonaea viscosa* - also called **sand olive**, **ysterhout** in Afrikaans, and **t'koubi** in Nama: Described as “one of the most important traditional medicines of southern Africa”. The young growing tips of the plant are a traditional treatment for fever, colds, throat infections, influenza, pneumonia and tuberculosis.
11. *Elarodendron transvaalense*, or **Ingwavuma** (Zulu): bark infusions are used to treat general body pain, fever, diarrhoea and infections. The authors describe it as an “important traditional medicine”.
12. *Eucalyptus globulus*, the **bluegum tree**, **bloekom** (Afrikaans): leaves and oil are useful as decongestant medicines for colds and flu. Bluegum trees are from Australia but have become part of the South African landscape over time. Globulus is one of the most popular eucalyptus trees for traditional medicine. The leaves are sometimes sold on muthi markets to treat colds.
13. *Gymnospora senegalensis*, or **red spikethorn**: Used for sore throat, headache, earache, fever, measles, abdominal pain, etc.

14. *Leonotis leonurus*, or **wilde dagga**: Leaf infusions and decoctions can be used for treating colds, flu, coughs, bronchitis, asthma, and headaches. The plant contains the same diterpenoid lactones as a European traditional cough medicine.
15. *Lippia javanica*, or **fever tea**: infusions of the leaves are used to treat coughs, fever and bronchitis. Weak infusions are taken as a general health tea.
16. *Mentha longifolia*, or **wild mint**, ballerja, kruisement (Afrikaans), **ufuthane lomhlange** (Zulu), **koena-ya-thaba** (Sotho), **inixina** (Xhosa): has many medicinal uses across various parts of southern Africa. Uses are for respiratory ailments, headaches, and fever. It has decongestant, antispasmodic and antibiotic effects.
17. *Pelargonium sidoides*, or **rabas**, roorabas (Afrikaans), **kgwara e nyenyane** (Sotho), Umchaloabo (German): The latter is a medicine produced from the indigenous plant by the German company Schwabe, to treat bronchitis in children. The activity is ascribed to coumarins such as umchalin. *Pelargonium cucullatum*, or **wildemalva** (Afrikaans): traditional medicine for chest ailments and coughs.
18. *Sclerocarya birrea*, or **marula**: Bark or root decoctions are used for diarrhoea, fever and malaria. The bark's antidiarrheal effects have been linked to procyanidins.
19. *Siphnochilus aethiopicus*, or **African ginger**, wild ginger, **isiphephetho**, **indungulo** (Zulu): The rhizomes and roots are very popular traditional medicine in southern Africa, to the extent that there is concern about regional extinction. They are chewed for coughs, colds and asthma.

And lastly, a look at the uses of a controversial plant:

20. *Cannabis sativa*, **dagga** (Afrikaans), marijuana (English), umya (Xhosa), matokwane (Sotho), or nsangu (Zulu) (described in Chapter 9): Cannabis is a well-established traditional medicine. If used as a weak hot water infusion, it can be used to give relief from asthma, bronchitis, headache, migraine, pain, colds, flu, coughs, etc. In modern medicine, the plant and its extracts, and isolated cannabinoids are used for treating extreme pain, nausea caused by chemotherapy, and improving appetite in cancer patients, among others.

Although the cannabis industry is not yet legal in South Africa, on 18 September 2018, the Constitutional Court ruled that the Drug Trafficking Act and the Medicines Control Act should be amended. It ruled that it is unconstitutional to prevent people growing and using cannabis in private.

In November 2018, NSTF held a seminar on the topic: [Research on cannabis – Medicine? Recreation? Both?](#) with speakers **Prof Gilbert Matsabisa**, Professor of Pharmacology, at the University of the Free State; and **Dr Nirvana Morgan**, Executive member of the South African Addiction Medicine Society, and Honorary Lecturer in the Department of Psychiatry, at Wits University. Prof Matsabisa related his research under the topic: [Natural products research – medicinal cannabis](#), exploring the potential of chemical compounds derived from the plant to develop medicine that will be chemically effective in the treatment of diseases and conditions. He pointed out that a certain type of cannabis plants have psychoactive effects, while another type, known as hemp, is non-psychoactive and extremely useful. Dr Morgan discussed her research on [The health effects of non-medical cannabis use](#), addressing the dangers of using cannabis for recreational purposes over a sustained period of time, particularly the harm done to young people.

In conclusion:

South Africa has a wealth of biodiversity and a rich history of herbal remedies. Scientific studies should be done and promising plants and their components should be explored for development into innovative products, symptomatic treatment and possibly essential life-saving drugs. The initiatives of the DSI should be supported and expanded in this regard, by government as well as the private sector.

Traditional healers should have been included in the initial response to the pandemic. They could have played a role in raising awareness about the coronavirus, and the measures to be taken to avoid

getting infected. They might have played a role in mitigating the fear and panic that set in once the pandemic is in the current phase of unstoppable spread. (Perhaps they are playing that role now.) They could have been urged to use herbal remedies that do not involve smoke inhalation. I am uncertain of the extent of awareness of traditional healers and their inclusion in the efforts to fight the pandemic.

I personally hope that South Africa's people will find solace at this time in the variety of beliefs, rituals, and traditional treatments of disease that we have.

Glossary

Decoction: a method of extracting plant material by boiling a plant (Wikipedia)

Infusion: made by soaking plant material in water, oil or alcohol. Examples are teas, and coffee when made with ground coffee beans in a French press. (Wikipedia)

The opinions expressed above are those of the Executive Director, Ms Jansie Niehaus, and do not necessarily reflect the views of the [Executive Committee](#) or [members](#) of the NSTF.