

# What is in Rooibos and why it matters

As far back as 1830 botanists at the Cape made sketches of the Rooibos shrub and published their work. Since then scientists around the world have published their Rooibos research findings in a wide variety of leading scientific journals.

In 2008 Professor Lizette Joubert of the Agricultural Research Council and Professor Wentzel Gelderblom of the Medical Research Council, along with two more collaborators, published an overview of existing knowledge about the history, cultivation, traditional uses, composition and biological activity of Rooibos and other South African herbal teas. Their 37-page review article was published in the *Journal of Ethnopharmacology*.\*

Key facts about the composition of Rooibos, and the importance of its compounds, can be summarised as follows:

- Rooibos contains a complex mix of many flavonoids (compounds widely found in plants that are known to have health benefits).
- Its composition is unique, because it contains **aspalathin** - to date only isolated from *Aspalathus linearis* (the botanical name for Rooibos).
- Aspalathin is the major flavonoid of unfermented Rooibos. It decreases during fermentation, but is still a major flavonoid constituent of fermented Rooibos (the tea with the characteristic red-brown colour and flavour).
- Aspalathin is important, not only because it is a novel compound, but also because it is the most active antioxidant in Rooibos in many cases.
- Rooibos also contains the rare flavonoid glucoside nothofagin.
- Other major phenolic compounds are orientin and iso-orientin, with smaller amounts of vitexin and isovitexin and many more compounds.
- The flavonoid composition of Rooibos varies between different regions and seasons, probably due to different soil and climate conditions, as well as genetic variations in the seeds used to propagate the plant.
- Rooibos does not contain caffeine.
- It is considered a low tannin beverage, especially when compared to *Camellia sinensis* (black) tea.
- The antioxidant activity of teas is very important, because they can scavenge free radicals and so help to protect cells and lipids (fats) against oxidative damage. Several studies have shown that Rooibos extracts contain powerful free radical scavengers.
- The flavonoids in Rooibos are also able to modulate (influence) the actions of carcinogens in the cell, thereby preventing or slowing down cancer. The major flavonoids in Rooibos (and possibly also other Rooibos compounds that are still unknown) demonstrate antimutagenic properties. In some studies green (unfermented) Rooibos is a more potent antimutagenic agent, while other studies found that fermented Rooibos has a higher antimutagenic effect. The type of mutagen (cancer causing substance) also has an effect.
- The antioxidants in Rooibos also protect the liver against oxidative stress and it could have value for liver patients. Studies on Japanese quails have shown that Rooibos also has an antihemolytic effect (protecting blood cells) and anti-ageing properties (slowing down brain degeneration and prolonging fertility).
- The bronchodilatory, antispasmodic and blood pressure lowering effects of Rooibos, and its potential to stimulate the immune system, has been shown in some studies, but needs to be further explored.
- Human studies have shown that taking Rooibos is an effective way to treat several skin conditions. It decreased the incidence of *herpes simplex* within a few days, helped for itching (associated with dermatitis), and could reduce inflammation and sun sensitivity of the skin.