

*A comparison of the chemical composition of **Aloe ferox** and **Aloe vera** was performed based on values available in the literature (Femenia 1999, Mabusela 1990). It must be noted, however, that concentrations tend to vary seasonally and geographically (Grindlay 1986).*

*The different monosaccharide components of the polysaccharides present in the **Aloe ferox** and **Aloe vera** gel are compared (expressed as mol%).*

Monosaccharide	Aloe vera (gel)	Aloe ferox (gel)
Rhamnose	1.69	3
Fucose	1.94	1
Arabinose	1.92	5
Xylose	2.34	13
Mannose	46.07	35
Galactose	4.97	5
Glucose	27.03	46

*Similarly, scientific tests comparing the differences between **Aloe ferox** and **Aloe vera** plants (whole leaves), growing side by side, were performed at the Kirstenbosch National Botanical Garden in Cape Town, South Africa.*

The tests demonstrated the following:

- 1. The freshly cut leaf of **Aloe ferox** produced approximately 20 times more bitter sap, weight by weight, than the **Aloe vera**.*
- 2. **Aloe vera** has a much softer and more translucent inner gel. It is also notably more mucinous.*
- 3. After extraction, the juice of the **Aloe vera** leaves decolourizes and loses its viscosity much more rapidly than does the juice of **Aloe ferox**.*
- 4. The solids content of the juice in **Aloe ferox** were constantly greater in volume than those obtained from **Aloe vera**.*
- 5. The amino acid content of **Aloe ferox** is almost double that of **Aloe vera** (see table).*

Amino Acids	Aloe vera (Whole Leaf)	Aloe ferox (Whole Leaf)
Glutamic acid	4.7	2.8
Asparagine	3.29	14.47
Aspartic acid	1.75	1.41
Serine	1.27	1.69
Glycine	0.95	1.25
Alanine	0.91	1.04
Glutamine	0.83	3.82
Valine **	0.36	0.56
Threonine **	0.33	0.9
Proline	0.25	0.46
Lysine **	0.18	0.08
Arginine	0.12	0.05

Leucine **	0.09	0.12
Phenylalanine **	0.08	0.07
Isoleucine **	0.07	0.12
Tyrosine	0.06	0.05
Cystine	0.04	0.01
Histidine	0.03	0.02
Methionine **	0.02	0.07
Tryptophane **	0	0
Total Concentration (nMol/mg dry mass)	15.33	28.99

*Aloe ferox and Aloe vera contain 7 of the 8 essential (** in table) amino acids and all the other 12 non-essential amino acids. Similarly the mineral concentrations of Aloe vera (Femenia 1999) were compared to typical concentration measured in Aloe ferox (expressed as % of dry matter).*

Minerals	Aloe vera (Whole Leaf)	Aloe ferox (Whole Leaf)
Calcium (Ca)	3.58	8.82
Magnesium (Mg)	1.22	1.68
Sodium (Na)	3.66	3.08
Potassium (K)	4.06	6.3
Phosphorus (P)	0.02	
Iron (Fe)	0.1	0.54
Copper (Cu)	0.06	0.04
Zinc (Zn)	0.02	0.8

*It is evident that **Aloe ferox** contains a higher concentration of these minerals, which can potentially ascribed to its harvesting in its natural habitat and not in domesticated fields. As can be seen the chemical composition of **Aloe vera** is comparable to that of **Aloe ferox**.*