MAQUI-SELECT
Extracted Chilean Organic Maqui Berry

The highest antioxidant fruit on the planet

* Certified Organic by CERES (Certification of Environmental Standards GmbH)
Maqui Berry is Harvested Wild in Pristine Southern Chile

Maqui Berries have the highest anti-oxidant of any fruit

* as measured by Brunswick laboratories. The fruit juice has an ORAC value of >50,000 μmole TE/100g and anthocyanin value of 2242mg/100g. The concentrated extract has an ORAC value of > 90,000 μmole TE/100g and anthocyanins value of 4027mg/100g.
Anthocyanins are antioxidant flavonoids that protect many body systems and have some of the strongest physiological effects of any plant compounds.

Anthocyanins are produced by plants for self-protection against, sun, irradiation, diseases, and biological enemies.

The harsh climate of central and southern Chile, together with recent high solar radiation (50% increase in the last 30 years) have increased the anthocyanins in the fruits and berries that are grown in that region. Especially Maqui.
Maqui Berry

(Aristotelia chilensis)

- **Maqui is a deeply purpled berry** from the Patagonia region, that stretches from Central/Southern Chile to Antarctica, one of the cleanest place on this planet.

- **Extraordinary high concentration of anthocyanins**, contain high content of phenolic compounds and anthocyanins that exhibits high antioxidant activity.
Maqui has the highest anti-oxidant content of any fruit

- **2-3 times higher** than Acai & Goji berry (currently considered as the highest ORAC value superfruit),
- **more than 3 times** higher than mangosteen,
- **8 –10 times higher** than pomegranate,
- **50 times** more than a glass of red wine.
ORAC as metric of antioxidants

**ORAC**: The ORAC test, measures a food’s antioxidant ability to neutralize free radicals and potentially mitigate health imbalances. The power of each fruit or vegetable is measured in Trolox equivalents (u mole TE/g) per gram.

- **Nutritionist recommend** at least 3,000 ORAC per day and more if under any of the various stressors most of us face each day. Most individuals get only 1,200 ORAC units or less per day.
The Mapuche Indian tribe is the only tribe in American Continents that were not conquered by any European Countries. According to the Conquistadors the Mapuche warriors ate very little solid food and drink a fermented beverage made from maqui berry several times a day, which may have contributed to the extraordinary strength and stamina that the warriors exhibited.

The Mapuche Indians have used Maqui’s berry leaves, stems, fruits, and wine medicinally for thousands of years.

Maqui berries has been traditionally used by the Mapache Indians for sore throat, diarrhea, ulcers, hemorrhoids, birth delivery, fever, tumors and other ailments.
Benefits of Maqui Berries:

- Anti-inflammatory
- Natural COX-2 Inhibitor
- Protect cells from oxidative stress
- Fight free radicals
- Anti-aging
- Cardiovascular health

- Good source of Vitamin C and Potassium.
- It contains the highest ORAC value of any known berry.
- It also contains high level of polyphenols and anthocyanins.
- The juice concentrate has an ORAC value of >800,000 μmole TE/kg and anthocyanin value of 22,420mg/kg.

- Exhibits strong anti-inflammatory activity.
- Effectively inhibits the NFkappaB, the key regulator of our immune and inflammatory system.
- At effective dose, Maqui completely erases the COX-2 enzyme and reduces other cytokines that causes pain and inflammation.
- In vitro cancer study with human leukemia cells and colon cancer cells confirmed maqui’s traditional usage for treating cancer and tumor.
Inflammation plays a major role in the development of most diseases.

- Cancer
- Cardiovascular diseases
- Neurological diseases
- Pulmonary diseases
- Autoimmune diseases
- Diabetes II
- Alzheimer
- Arthritis

Dysregulated Inflammation
ORAC Value of Various Fruits

ORAC hyro (umole/g)

Maqui Concentrated Powder: 945
Maqui Juice: 820
Acai Concentrate Powder: 300
Goji Berry: 300
Maqui Frozen fruit: 276
Mangosteen: 225
Acai Frozen Pulp: 167
Pomegranate: 105
Blueberry: 61
Boysenberry: 45
Strawberry: 27
Rasberry: 21
Red Grape: 14
Maqui Research at Universidad Austral de Chile
directed by Juan Hancke PhD.

- Supports healthy blood sugar levels
- Anti-inflammatory
- Boosts immune system
- **Neutralize enzymes that destroy connective tissue**, prevents oxidants from damaging connective tissue, and repair damaged proteins in the blood-vessel walls.
- **Lightens allergic reactions and increase capillary permeability.**
- **Promotes cardiovascular health** by preventing oxidation of low-density lipoproteins (LDL), and protecting blood vessels wall from oxidative damage.
- Maintain **small blood vessel integrity** by stabilizing capillary walls.
- May improve eyesight
Chronic inflammatory processes are an important factor in the formation of intestinal tumors. It is known that the transcriptional factor NF-κB is a central factor in the development of inflammation and colon cancer.

Preliminary results suggest that *Maqui* has an inhibitory effect on the reporter gen NF-κB-luc in HL-60 cells indicating that the product might represent an alternative for the treatment for colon cancer via anti-inflammatory mechanism of action (patent pending).
Maqui berry, is one of the most power-packed with anthocyanins of all the fruits and berries for supplemental consumption.

Anthocyanins are produced by plants for self-protection against sun, irradiation, diseases and biological enemies; to thrive in the harsh climate of central and southern Chile, (increased solar radiation) necessitates maqui’s abundant anthocyanin production.
Laboratory Research Shows That Anthocyanins:

- Reduce the coagulation of blood platelets, inhibiting formation of blood clots involved in stroke, pulmonary embolism, peripheral vascular disease and heart attack.
- Promote higher levels of “good” cholesterol, HDL.
- Inhibit oxidation of “bad” cholesterol, LDL.
- Neutralize oxygen radicals.
- Down-regulate enzymes leading to inflammatory reactions that cause pain and stimulate other diseases.
Maqui Berry scores the highest in ORAC, Anthrocyanins and Total Phenols

<table>
<thead>
<tr>
<th></th>
<th>ORAC hydro (μmole/100g)</th>
<th>Anthocyanins (mg/100g)</th>
<th>Total Phenols (mg/100g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Wine</td>
<td></td>
<td>24-35</td>
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<tr>
<td>Red Grape</td>
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<td>30-750</td>
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<tr>
<td>Strawberry</td>
<td>2600</td>
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<td>Boysenberry</td>
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<td>Cherry</td>
<td>2100-4700</td>
<td>350-400</td>
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<td>Blackberry</td>
<td>5100</td>
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<td>3000</td>
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<td>Cranberry</td>
<td>5200</td>
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<td>1000</td>
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<tr>
<td>Red Raspberry</td>
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<td>Black Raspberry</td>
<td>5000-16,400</td>
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<td>Blueberry</td>
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<td>Bilberry</td>
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<td>300-648</td>
<td>400</td>
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<td>Mangosteen</td>
<td>20,000-30,000</td>
<td>195</td>
<td>1500</td>
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<tr>
<td>Acai</td>
<td>18,400-31,000</td>
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<td>Maqui Juice</td>
<td>40,000-80,000</td>
<td>800-2200</td>
<td>4000-5000</td>
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<td>Maqui Concentrated Powder</td>
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<td>4027-5000</td>
<td>7000-9000</td>
</tr>
</tbody>
</table>
Maqui Berry has the highest Total Antioxidant Reactivity (TAR):

- indicates the capacity to decrease steady state of free radical concentration and is a better index of antioxidant quality. Total phenols is positively correlate to TRAP and TAR.
Safety data

Maqui Berry

- Toxicology Studies completed at Chilean Universities studies prove Maqui to be safe.

- According to regulations imposed by MERCOSUR, Maqui is registered as a condiment of botanical origin. It is used as a fruit or for its properties as an aromatizer or flavoring and consequently there are no restrictions regarding those plant parts which are used in normal consumption.
Review of Maqui’s Benefits

- **Highest natural ORAC value**
- **Highest anthocyanins** (from plants,)
- **Highest Polyphenols** (plays a role in the prevention of degenerative diseases) of any known fruit or berry including acai, mangosteen, amalaki and pomegranate
- **Anti-inflammatory** effects by inhibiting the expression of COX-2, (also modulates NFkappaB) which plays a role in inflammation
- **Antimicrobial** (kills or inhibits the growth of bacteria, fungi or viruses)
- **Analgesic** / pain relieving properties
- **Thermogenic properties** / raises core body temperature
- Prohibits LDL oxidation
- **Anti-atherogenic** / Helps manage healthy cholesterol & triglyceride levels
- **Stimulates PPAR receptors** / regulates cell development
In general this species is characterised by the numerous antioxidant substances found in its fruits (Miranda-Rottmann et al. 2002), among them are various flavonoid pigments (anthocyanins), which give the berry its characteristic dark violet colour (Stuntz 1996).

Its berries have a higher phenol content and score better for total radical-trapping potential and total antioxidant reactivity in in vitro antioxidant capacity tests, when compared to different commercial berries.

Its juice is also effective in inhibiting copper-induced LDL oxidation (oxidative modification of low-density lipoprotein LDL, particles is a key event in the development of atherosclerosis, oxidized LDL induces oxidative stress and modifies gene expression in endothelial cells).

In human endothelial cell cultures, the addition of juice from A. chilensis was found to protect against hydrogen peroxide-induced intracellular oxidative stress.

The aqueous, anthocyanin-rich fraction of the juice accounts for most of its antioxidant properties.

A. chilensis is a rich source of phenolics with high antioxidant capacity and suggest that it may have antiatherogenic properties (Miranda-Rottmann 2005). Aristoteline has also been identified as a secondary metabolite with antimitotic activity (Cespedes et al. 1990).
Bibliography