

UNIVERSITY OF HOHENHEIM
APICULTURAL STATE INSTITUTE



MASTER THESIS

Title:

**Analysis of the chemical, physical and botanical properties of
Quillaja saponaria honey in order to support Fair
Trade honey production in Chile**

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Organic Agriculture and Food Systems

504658

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This Master Thesis was funded by the Stiftung Fiat Panis

Submission: August 14th 2013

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Degree	Master of Science
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Abstract

During the flowering period of *Quillaja saponaria* (Quillay) 69, mostly Fair Trade honey samples were collected at apiaries of small scale beekeepers between Rancagua and Santa Bárbara in Chile. The samples were analyzed regarding electrical conductivity, pH value, water content, free acids, enzymatic activity of diastase and invertase, pollen content and pollen frequency. Especially with the pollen analysis in combination with the additionally obtained values a characterization of monofloral Quillay honey should be elaborated. The physical-chemical parameters of honeys with a high pollen content of *Quillaja saponaria* showed no significant difference to honeys with other pollen compositions. Differentiation therefore had to rely on the pollen spectrum. From that it was concluded that the pollen of *Quillaja saponaria* is normally represented in the honeys. 27 honey samples show more than 45 % of Quillay pollen, which would be denominated as monofloral in Chile. In order to obtain a recognizable high quality monofloral honey that complies with the regulations of the European Commission, it is suggested to aim at a higher pollen percentage of *Quillaja saponaria*. The study proposes at least 60 %. This was fulfilled by twenty honeys. By marketing honey of *Quillaja saponaria* as a new Fair Trade honey, APICOOP, a Chilean Fair Trade honey exporter, can broaden the honey Fair Trade assortment with a high quality honey, produced under Fair Trade conditions. The livelihood of small scale beekeepers can be secured or enhanced. In order to achieve this, measures have to be taken in order to raise the share of *Quillaja saponaria* nectar in general, for meeting the higher European requirements in a sufficient quantity.