

Quality-Management of *Moringa oleifera* in Switzerland and Europe

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Moringa and Fruit Powder

0) Abstract

The development of a quality-management of *Moringa oleifera* products for Swiss and European food-producers is presented.

1) Starting-point

Vitarbo introduces Moringa as a valuable ingredient to food-producers in Switzerland and Europe. We would like to present the product to renowned food-companies and are inspected by the Swiss food-safety authority. From this follows a requirement for high quality of product and documentation.

Moringa in Switzerland is a relatively new product, quality-requirements need to be established. For Moringa leaf powder no official specification exist. What general **food-safety**-risks are there? What are customer-demands?



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ELEPHANT
MORINGA**

2) Legal compliance

Swiss food law as well as European legislation need to be considered, whereas Switzerland and Europe have very similar requirements. Laws on traceability, contaminants and food-hygiene are most important.

Traceability is required by Swiss Food- and Commodities Regulation (Art. 49 No 3 c): It must be possible to tell the path a food from farm to fork. Our suppliers have to be able to tell where and when and the product shipped to Europe has been produced. We ourselves and our suppliers must use lot-numbers on samples and all documents.

3) HACCP-risk-analysis

An Hazard Analysis & Critical Control Points-Analysis (HACCP) evaluates along 7 steps the most relevant risks to health that exist for moringa. A dossier is established, that includes a comprehensive risk-analysis for the product. Starting-point can be the RASFF notifications¹ – here food-safety-problems with moringa concern salmonella, heavy metals and pesticides. An analysis of the production-process and the intended use of the product are also part of the HACCP-analysis. Based on this analysis, measures are established to control the risks and specification-limits are set for individual risks. Basis for limits are food-law, industry codes of practice and customer-requirements:

Heavy metals, other contaminants	Ordinance on foreign substances and components (CH) and Commission Regulation (EC) No 1881/2006 (EU)
Pesticides	Ordinance on foreign substances and components (CH) and Commission Regulation (EC) No 1881/2006 (EU+CH) ²
Microbiology	Ordinance on hygiene (CH) and Commission Regulation (EC) No 2073/2005 (EU) on microbiological criteria food Guidance and warning levels issued by DGHM (German Society for Hygiene and Microbiology)

4) Setting up a specification

A specification is a general document with a list of properties that a supplier guarantees for a product (unlike a list of typical data or certificates of analysis for individual lots). For nutritional labelling of Moringa, food composition data have been collected from laboratory-analyses and literature. Packaging, physical properties, microbiology, contaminants, allergens and absence of genetically modified organisms (GMO) should be specified. Later, between every supplier and purchaser, a signed copy of the specification should be available, to have a common basis for agreed the quality of the product.

5) Setting up a testing-plan

Which analyses need to be performed how often and by whom? Examples of considerations:

- Heavy-metals depend on the soil. When the material comes from the same field, an analysis once a year may be enough.
- Pesticides come from agricultural practice. If the producer can be trusted, not every batch needs to be checked – unless customers want proof of safe products.
- Microbiology can change from production to production, as the environment may change and variations in processing can affect quality. Tests of every production are necessary. Key-parameters are for example total plate count, Enterobacteriaceae, E. coli and Salmonella.
- Sensory and physical parameters like moisture and impurities have to be checked every time. This can be done by the producers themselves.
- Nutritional data may be tested once a year, provided there are no changes in growing and processing.

6) Certificate of analysis

For every production-lot that is bought from Vitarbo, a certificate of analysis with a relevant selection of analytical results can be provided for our customers.

Contents of the CoA (parameters, limits, test-methods, test-frequencies) can be agreed upon with the customer on an individual basis.

7) On-going work - conclusion

With a new supply-chain and a new product, at the beginning, quality-control involves more effort than with established business-relations and products.

Pre-shipment-samples evaluate a product before it is sent. The sample must be corresponding to the actual shipment, sampling has to be done in a representative way. Identification and packaging of samples reflects the quality of the producer.

With an ordered process for quality-control, food safety is ensured and lasting, happy business-relations are established.

In future, recognised international standards for moringa-products could help to boost customer-confidence and facilitate trade.

8) References

- Swiss Ordinance on foreign substances and components, (FIV)
- Swiss Ordinance on Hygiene (HYV)
- Swiss Food- and Commodities Regulation
- Commission Regulation (EC) No 2073/2005 and No 1881/2006

9) Footnotes

- RASFF notifications
http://ec.europa.eu/food/safety/rasff/portal/index_en.htm
- EU-Pesticides-Database
http://ec.europa.eu/sanco_pesticides/

10) Contact & further information

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