# Seabuckthorn products

## actual trends in Germany and the European Community

J.-Th. Moersel, Sascha Kuehn, G. Zvaigzne
UBF GmbH, Altlandsberg
Asiaberry 2024, Ulaanbaatar,Mongolia

www.ubf-research.com

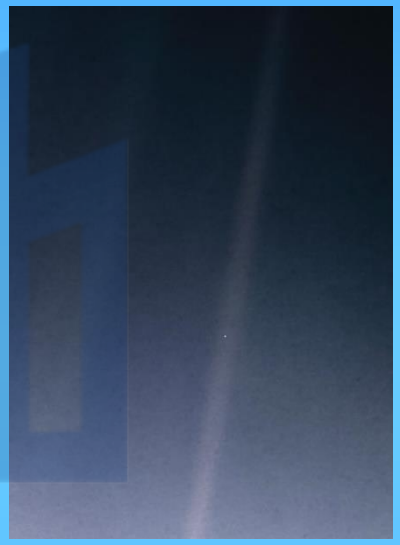
# Content

- SBT's position in the world and in EC
- Consumers expectations
- Organic grown vs. conventional farming
- "free off" – residues as a 'no go'
- Results from quality control over 20 years
- Consequences for growers and processors
- Quo vadis

# SBT's position in the world and EC

Naturally different - the SBT plant

- different species, sub-species and varieties
- different areas of cultivation
- different technologies of
  - harvesting
  - after harvest treatment
  - processing

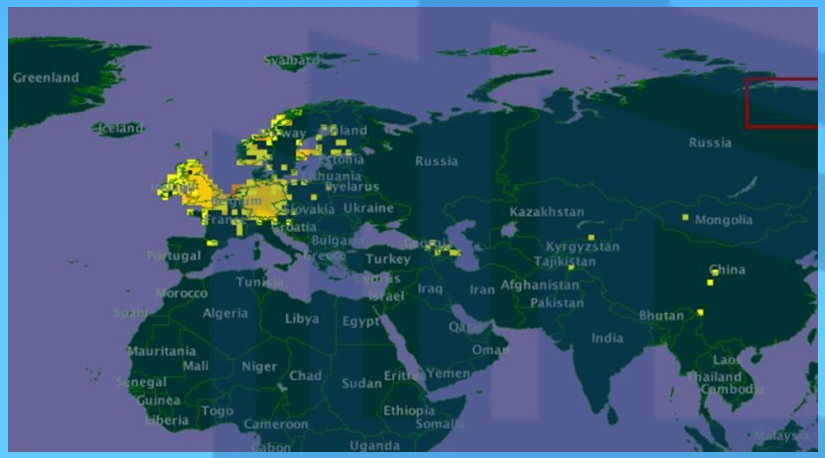


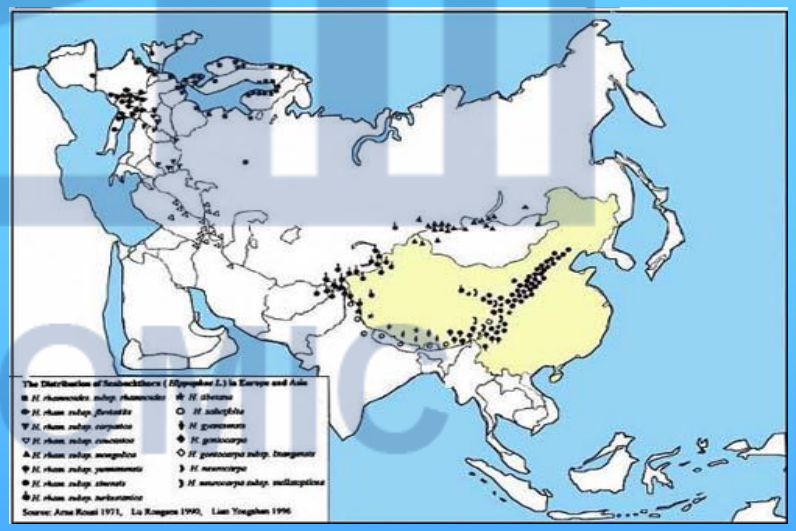
From nature different - the customers influence

- different expectations on product
- different products
- manifold applications

# SBT in the world

## EC databases …… ICRTS data



So we have to accept that different customer expect different product properties and qualities

!

# Consumers expectations

Different too

- Depending on culture
- Depending on experiences
- Depending on wealth and abundance or poverty and hunger

Western hemisphere customer expect

- Highs quality at the cheapest price
- “natural” or “organic” products
- It’s a kind of new religion, from my view comparable to halal or kosher
- No longer determined by measurable properties
- Soft properties
- People believe in papers

# Organic vs. conventional farming

- Reaction to pollution of environment
- Developed in the last half century
- Where people have enough to eat
- In EC widely spread – but with a closer look very different in degree of application
- In SBT market a must for producers and growers
- Not a SBT specific expectation – belongs to many “super”fruits

# “free off” – residues as a ‘no go’

We face more problems in growing SBT

- Insects as predators
- fungi and molds
- plant diseases - viruses

Strategies often based on application of agrochemicals

- Not accepted in population
- Risky to nature
- Not specific – many side effects

So what to do?

# “free off” – residues as a ‘no go’

So what to do?

- It’s a general development in consumers expectations
- heavily fuelled by marketing
- The new product property – FREE OF
- Free of colorants
- Free of additives and so on

So we have to accept and to make our decisions based on this knowledge

# Results from quality control over 20 years

Areas of investigation

1. pesticides
2. Polyaromatic hydrocarbons
3. Heavy metals
4. Industry waste

---

EC regulations 1

- 1107/2009 – and many updates
  better search here :https://food.ec.europa.eu/plants/pesticides/eu-pesticides-database_en

EC regulations 2-3

- 1881/2006
  - Pb, Cd, Hg, As
  - Benzo(a)pyrene
  - Sum of Benzo(a)pyrene, Benz(a)-anthracene, Benzo(b)-fluoranthene and Chrysene

# Results from quality control pesticides

- Annually around 50 to 100 samples, berries, oil (pulp), juice, powders
- Seldom residues found
- In Oils
  - Pirimiphos-methyl
  - Diphenylamine
  - Content between 0,05 and 0,6 mg/kg
- In Berries
  - Cyprodinil
  - Pyrifosmethyl
  - 0,01 – 0,1 mg/kg
- Samples from Germany and Hungary

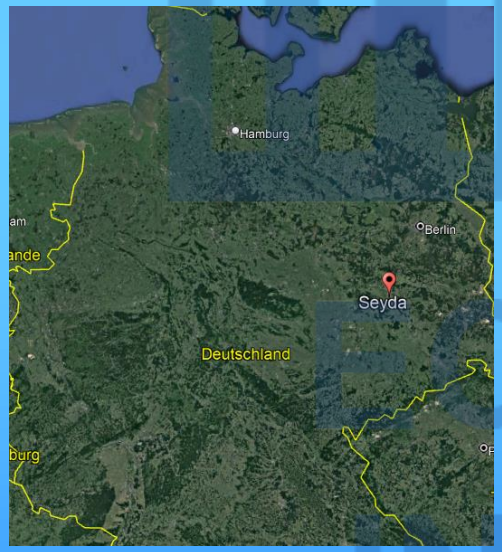
# Results from quality control chemicals

Chemicals found in environment

- Diphenylamine

Where coming from

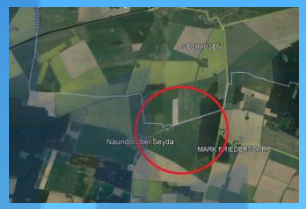
Several positive results over years

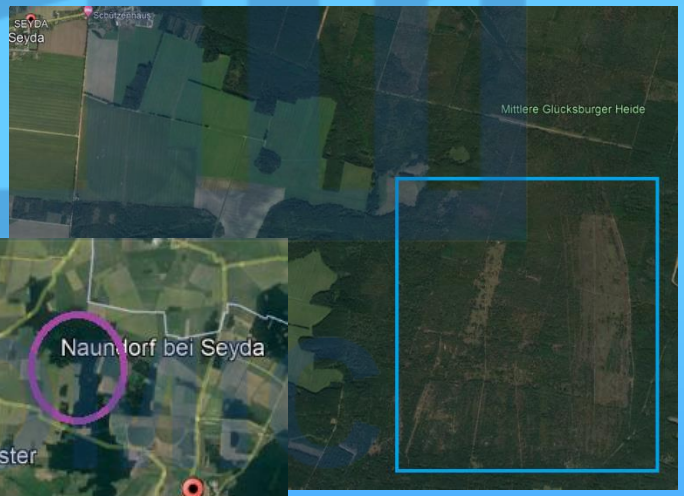



# Results from quality control chemicals

Diphenylamine

- Fungicide
- Used in explosives to stabilize
- Used in chemical synthesis of colorants






# Results from quality control PAH

Polyaromatic hydrocarbons

- 4 compounds in EC under regulation (sum of content) and
- Benzo(a)pyrene individually
- MRL (for oil)
  - Sum < 10 µg/kg
  - Benzo(a)pyrene < 2 µg/kg

| | berries | oil | powder |
|---|---|---|---|
| | µg/kg | | |
| Benzo(a)pyrene | 1,05 | 1,51 | 0,66 |
| Benz(b)fluoranthene | 0,88 | 2,41 | 0,79 |
| Benz(a)anthracene | 1,34 | 4,36 | 1,46 |
| Chrysene | 2,32 | 5,65 | 2,6 |
| n | 56 | 84 | 36 |
| SD (method) | ± 6,4% | ± 8,3% | ± 5,7% |

# Results from quality control heavy metals

EC regulations and Ph.Eur / USP

- 4 Elements: As, Hg, Cd, Pb
- Depending on field of application
- MRL (for food supplements)
  - Pb 3 mg/kg
  - Cd 1 mg/kg
  - Hg 0,1 mg/kg
  - As 0,2 mg/kg (adapted from rice)

| | berries | powder | juice |
|---|---|---|---|
| | mg/kg | | |
| Pb | 0,07 | 0,743 | 0,04 |
| Cd | 0 | 0,00 | 0,00 |
| As | 0 | 0,00 | 0,00 |
| Hg | 0 | 0,00 | 0,00 |
| n | 84 | 35 | 72 |
| SD (method) | ± 3,4% | | |

# Consequences for growers and processors

- overall no worrying results
- most causes are residues of industrial production
- Connections between location and findings often have to be clarified
- Pesticide residues occasionally- sources unclear
- Organic farming is done consequently
- Grower and producer have to search for possible reasons when growing organically

# Quo vadis Seabuckthorn

# Quo vadis Seabuckthorn

- SBT will continue to be niche product
- It is “the healthy product”
- Market will grow
- Organic grown products are in the focus of the consumer
- We need to be prevented SBT from adulteration
- We need an ecological clean strategy for SBT growing, knowing that flies, fungi, climate will challenge us
- SBT producers, traders and processors should be vigilant and investigate the causes of residues
- In this way, you can react in good time and take countermeasures

# Thank you for your interest

**Σας ευχαριστούμε για το ενδιαφέρον σας**

**www.ubf-research.com**

**www.sanddorn.net**

ECONOMIC INSTITUTE 1962