

Fighting Fire Blight in the Lake Constance Region



Interdisciplinary Project to Secure
Sustainable Fruit Production in Austria,
Germany, Switzerland and Liechtenstein

2007-2011

Together Against Fire Blight

Fire Blight is an Emerging Regional Threat

Pome fruit production (apple, pear, quince) has a long history in the Lake Constance region. For hundreds of years, fruit trees have been a cultural cornerstone, providing a valued agricultural harvest, enriching quality-of-life with a landscape adorned by Spring blossoms, and sustaining ecological biodiversity. The Lake Constance region is a major European center for apple and pear production today. Table fruit and nursery tree production are important agro-economic engines in the region. Since the early 1990s, the very existence of orchard and landscape pome fruit production has been threatened by fire blight, an invasive bacterial disease rapidly spreading throughout the region.

Fire blight is extremely difficult to control and is highly aggressive, capable of killing trees or orchards within a single year. In 2007, a particularly devastating epidemic demonstrated the emerging threat of fire blight. Control strategies differ in our neighboring countries, from availability and application of crop protection products, to sanitation and eradication approaches, to selection and recommendations for planting tolerant varieties.

Project Goals

- Bring together a multi-disciplinary and cross-sector team of scientists, local/federal agricultural inspectors, extension agents and fruit growers to develop practical solutions for fire blight
- Develop effective and safe alternatives to last-resort use of antibiotics
- Harmonise regional strategies for fire blight control, sanitation and eradication
- Select fire blight tolerant apple and pear varieties for sustainable replanting (building upon results from IR IIIA www.kernobst-bodensee.org)





'Schneiderapfel'
traditional apple variety



'Bayerische Weinbirne'
traditional pear variety

Our Project Focuses on 4 Critical Approaches

• Alternative Control Products

- Evaluating new, alternative control products for efficacy and safety
- Optimising fire blight control potential of biological products
- Transferring effective products from orchards to wider-use in old-growth/landscape systems

• Harmonised Cultural Control Methods

- Improving early fire blight monitoring methods for old-growth/landscape production systems
- Compare experiences with and diversity of cultural control methods (e.g., pruning)
- Field trial ring-tests for efficacy of different cultural control methods

• Resistant Plant Varieties

- Screening germplasm collections for fire blight tolerance in greenhouse tests
- Field monitoring fire blight tolerance of promising apple and pear varieties
- Producing science-based recommendations of tolerant varieties for growers and stakeholders

• Effective Communication

- Frequent exchange and transfer of expertise and results between partners and with stakeholders
- Up-to-date compilation of project progress from all partners
- Regular dissemination of current advances in fire blight control to fruit growers and the general public



Flower test for
alternative control
product evaluation



Pruning to remove
fire blight infections

Sentinel tree for monitoring in old-growth,
cider production systems



Project workplan



Project Partners

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- Technical University of Vienna, Getreidemarkt 9, 1060 Vienna, Austria, www.tuwien.ac.at
- Austrian Agency for Health, Nutrition and Food Safety, Spargelfeldstraße 191, 1220 Vienna, Austria, www.ages.at
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