Self-drying Plant Oils: Biobased Plant Skin Protection

Institute of Crop Science and Resource Conservation
Research Group Renewable Resources
University of Bonn
**Core Team**

PhD Student: Vera Breiing, MSc  
Scientific Supervisor: Dr. rer. hort. Thorsten Kraska*  
Head of Research Group: Prof. Dr. Ralf Pude

**Cooperation**

with & development  Michael Petry

supported by: Ministerium für Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen (FKZ: 17-02.04.01-08/2018)  
Promotionsstipendium der Deutschen Bundesstiftung Umwelt für Vera Breiing (AZ: 20016/420)

* Primary contact for communication
Why Biobased Plant Skin Protection?

Societal challenge to develop environmental safe plant protection products.

Protection of plants – especially plant surfaces – through self-drying plant oils which form oxidative drying film on surfaces.
What are self-drying plant oils?

... are natural products from plants
... are Triglycerides
... have a high content of unsaturated fatty acids (e.g. α-linolenic acid, α-Eleostearic acid)
... have a low oxidation stability at ambient Oxygen levels depending on numbers of double bounds, C-number, and content of trans fatty acids
... Are able to form films on surfaces
... Have a low ecotoxicity
... Examples are linseed oil, tung oil
„Self-drying Plant Oils“ – Facts

- easy to apply
- self-drying, oxidative drying
- No ecotoxicity and environmentally friendly (safe)
- Non-persistent, biologically degradable
- long-term adhesion
- further positive effects
Visible Sprayfilms on Apple leaves

Visible spray films on apple leaves after 4 applications.
Effects observed so far

... Protective control of bean rust on common bean and apple scab

... Curative control of aphids on beans and potato beetle in an in vitro test

... Control is local (no systemic effect in the plants)

... Oils were applied up to a concentration of 2%

... Oils can be combined with other substances

... Oils are not washed off

... Plants show a lower moisture stress index and higher greenness
Contact
Dr. rer. hort. Thorsten Kraska
kraska@uni-bonn.de
+49 (0)2225 99963-63
www.nawaro.uni-bonn.de