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Agroscope

Resource Project PFLOPF



Pflanzenschutzoptimierung mit Precision Farming

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Kickoff-Meeting Transformation

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Project overview



Objective:

Reduce the use of pesticides by at least 25%

- 3 cantons (AG, TG, ZH)
- 60 farms (arable farming, vegetable and fruit growing, viticulture)
- 7 (6) technologies to choose from, implement at least 2
- Period: 2019 - 2024 (+ 2 further years voluntary)

Well accepted technologies

T2: GPS steering systems (AF, VG)	reduced overlap of working widths	-3%	facilitates hoeing
T3: Automatic section control (AF, VG)	reduced overlap on headlands and field edge	-2%	avoids pesticide spills onto pathways
T5: Hoeing (AF, VG)	complete / partial replacement of broadcast spraying	-70%	

AF: arable farming, VG: vegetable growing

- Technology is actively used and works quite well
- Familiarisation takes time
- You have to be technophile (data storage and use as well cross-manufacturer data management are not trivial)
- Expensive technology – use of agricultural contractors – flexibility in planning is necessary
- Hoeing not possible on wet soils – workflows have to be changed

Plant-specific application and spraying drones

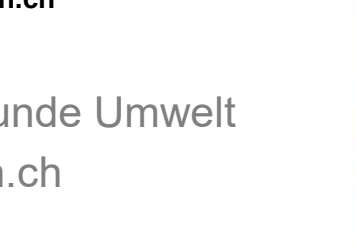
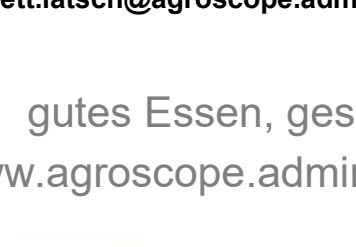
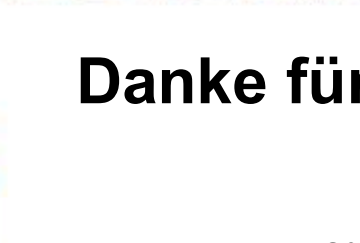
VG: vegetable growing, FG: fruit growing, V: viticulture

T4.1: Spot-spraying system on hoeing machine (VG)	<ul style="list-style-type: none"> - 40% (band) - 75% (broad) 	<ul style="list-style-type: none"> - adjustment of the system before spraying (crop diameter, speed, high of application..) - only in combination with hoeing – not possible on wet soils
T4.2: Sprayer with automatic adjustment of application rate to tree volume (FG)	to be determined	<ul style="list-style-type: none"> - test farm in Güttingen: familiarisation took several month, now very satisfied
T4.3: Dosage according to the foliage wall volume model (V)	<ul style="list-style-type: none"> - 30-60% (depending on vegetation stage) 	<ul style="list-style-type: none"> - determination of foliage wall volume - calculation of application amount - adjustment of the sprayer - every lane must be treated (practice: often only every 2nd) <p style="text-align: right;">} before every spraying</p>
T7: Spraying drones (V)	no reduction	<ul style="list-style-type: none"> - lower wetting of grapes and underside of leaves – more treatments may be necessary - spraying by contractors – limited availability – no better termination - advantages: user and soil protection, reduced drift

Farm-specific forecasts and treatment recommendations (T1)

- 15% less pesticides by using forecasting models for different pests and diseases, in-house weather stations, camera traps, PFLOPF platform befallsrisiko.ch

Arable Farming	<ul style="list-style-type: none">- several good models offer reduction potential- regular field monitoring and intensive study of the models and their interpretation necessary- new approach: from simultaneous treatment of all fields to differentiation according to varieties and locations
Vegetable Growing	<ul style="list-style-type: none">- forecasting models and camera traps not ready for practice – no reduction potential- weekly field monitoring provides good information on the current situation- Elimination of numerous insecticides in the next few years - cultivation only worthwhile on sites with low risks
Fruit growing, Viticulture	<ul style="list-style-type: none">- good models, already regularly used – low reduction potential- possibly more precise forecasts through in-house weather stations- Savings rather through recycle sprayer or robust varieties (e.g. PIWI)



Danke für Eure Aufmerksamkeit

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