Plant Protection Field Trials against Fire Blight in Switzerland

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Background

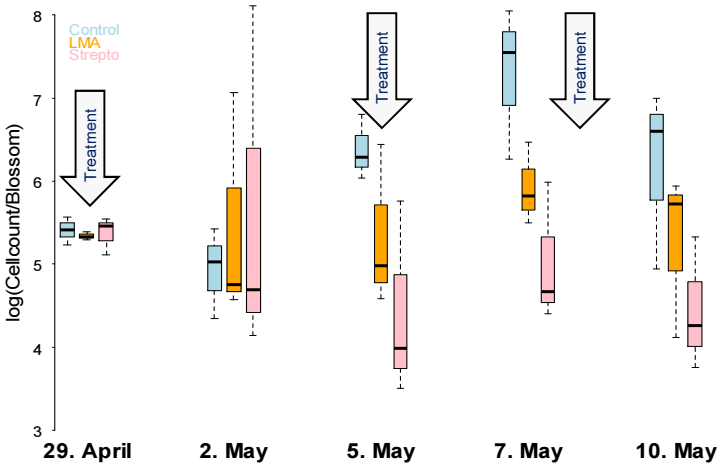
In Switzerland an entirely covered field trial has been established to investigate alternative strategies against fire blight as a replacement for the antibiotic Streptomycin.

Materials and methods

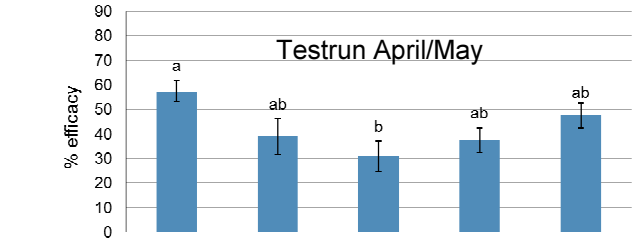
- Potted apple trees (var. 'Gala Galaxy')
- Two consecutive testruns (April/May and June/July)
- Flowers inoculated with *Erwinia amylovora* ($5x10^6$, resp. $1x10^6$ cfu/ml)
- 6 different plant protection treatments
- Rating of % infested flowers, calculation of efficacy values
- Quantification of bacterial cells on flowers by real-time PCR and cfu counting

Investigation of the *E. amylovora* population depending on different plant protection strategies and their efficacy values

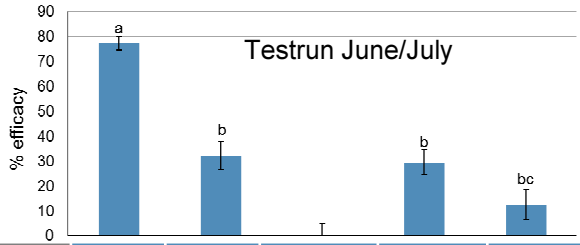
Real-time PCR - Testrun April/May 2015



Efficacy values of two testruns in 2015



Untreated control (Infestation)	Strepto LMA LMA	LMA LMA LMA	Myco-Sin Myco-Sin Myco-Sin	Myco-Sin LMA LMA LMA	Vacciplant (2x) Vac.+Myco-Sin BlossomProtect BlossomProtect BlossomProtect
31 %	57 %	39 %	31 %	38 %	48 %



Untreated control (Infestation)	Strepto LMA LMA	LMA LMA LMA	Lactic acid Lactic acid Lactic acid	Myco-Sin LMA LMA LMA	Vacciplant (2x) Vac.+Myco-Sin BlossomProtect BlossomProtect BlossomProtect
36 %	77 %	32 %	0 %	29 %	12 %

Conclusions

The efficacy of the reference treatment with Streptomycin and LMA was highest, but most of the treatments showed infestation rates significantly different compared with the untreated control. Cell quantification data were in accordance with infestation data. Due to high infestation rates, efficacy values were rather low. Further experiments in 2016 and the following years are needed to adjust the timing for application of alternative strategies depending on weather conditions and the products.

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