

## European Network Chemical Thinning Fruit Crops



### Protocol Thinning Studies Haidegg 2015

RoHo 3615 Evelina®



haidegg

Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg



Das Land  
Steiermark

## Brevis® - Thinning trial on RoHo 3615 Evelina® 2013 - 2015

<b>subject:</b>	Comparison of different concentrations of Metamitron
<b>aim:</b>	Evaluation of the thinning efficacy of Brevis® (Metamitron) applied with different spray volumes (1.000 l, 500 l and 250/350 l/ha)
<b>site:</b>	Haidegg Research Centre
<b>cultivar:</b>	Evelina® (club variety selected from Pinova)
<b>plot:</b>	1148/100
<b>year of planting:</b>	2006
<b>planting distance :</b>	3,4 m x 1,0 m (2.941 trees/ha)
<b>rootstock :</b>	M 9
<b>planting system:</b>	Single row, slender spindle, black hail net
<b>spray equipment:</b>	Experimental orchard sprayer, 250 – 1.000 l/ha
<b>design:</b>	9 treatments, every treatment included 3 trees with 4 replications (12 trees)



haidegg

Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg



Das Land  
Steiermark

## Brevis® - Thinning trial on Evelina® 2013 and 2014

1. **untreated 1** (without thinning) in 2013/tank mix **Metamitron 247,5 ppm + BA 150 ppm** (Brevis 1,65 kg + MaxCel 7,5 l/ha), 1.000 l/ha in 2014
2. **hand thinned** (6 fruits/cm<sup>2</sup> TCSA)
3. a) **Metamitron 247,5 ppm**: Brevis 1,65 kg/ha at 8/10mm KFD with **1.000 l/ha**  
b) **Metamitron 247,5 ppm**: Brevis 1,65 kg/ha at 12/14mm KFD with 1.000 l/ha
4. a) **Metamitron 495 ppm**: Brevis 1,65 kg/ha at 8/10mm KFD with **500 l/ha**  
b) **Metamitron 495 ppm**: Brevis 1,65 kg/ha at 12/14mm KFD with 500 l/ha
5. a) **Metamitron 990 ppm**: Brevis 1,65 kg/ha at 8/10mm KFD with **250 l/ha**  
b) **Metamitron 990 ppm**: Brevis 1,65 kg/ha at 12/14mm KFD with 250 l/ha
6. a) **NAAm 100 ppm**: Dirigol 200 g/ha 10-12 days DAFB with **1.000 l/ha**  
b) **BA 150 ppm**: MaxCel 7,5 l/ha at 10/12mm KFD with 1.000 l/ha
7. a) **NAAm 200 ppm**: Dirigol 200 g/ha 10-12 DAFB with **500 l/ha**  
b) **BA 300 ppm**: MaxCel 7,5 l/ha at 10/12mm KFD with 500 l/ha
8. a) **NAAm 400 ppm**: Dirigol 200 g/ha 10-12 DAFB with **250 l/ha**  
b) **BA 600 ppm**: MaxCel 7,5 l/ha at 10/12mm KFD with 250 l/ha
9. **untreated 2** (without thinning)

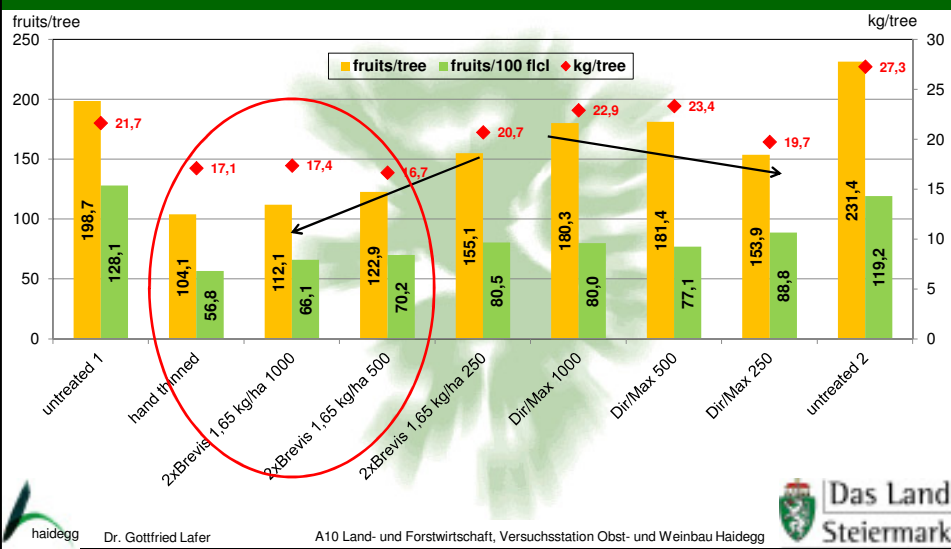
haidegg

Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg



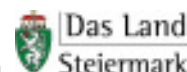
## Thinning trial on Evelina yield data 2013



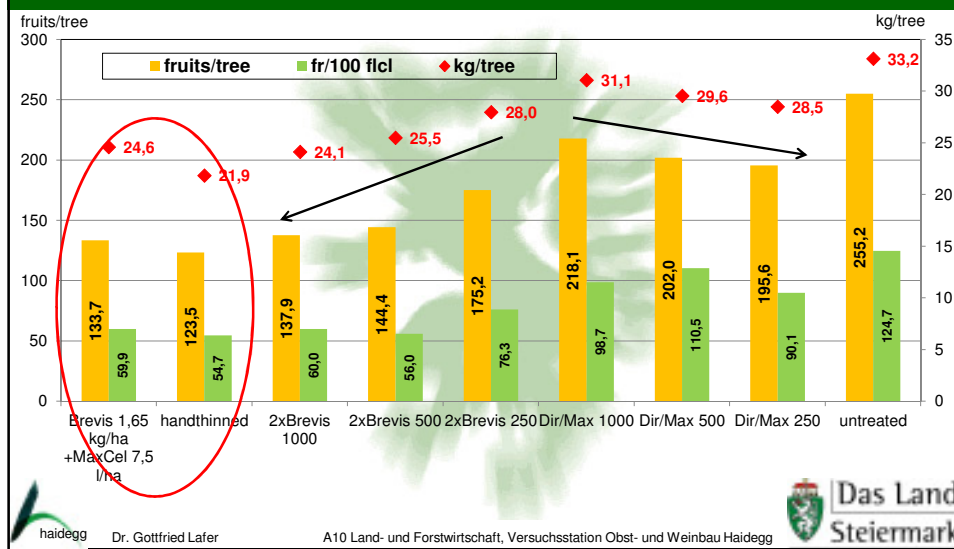
haidegg

Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg

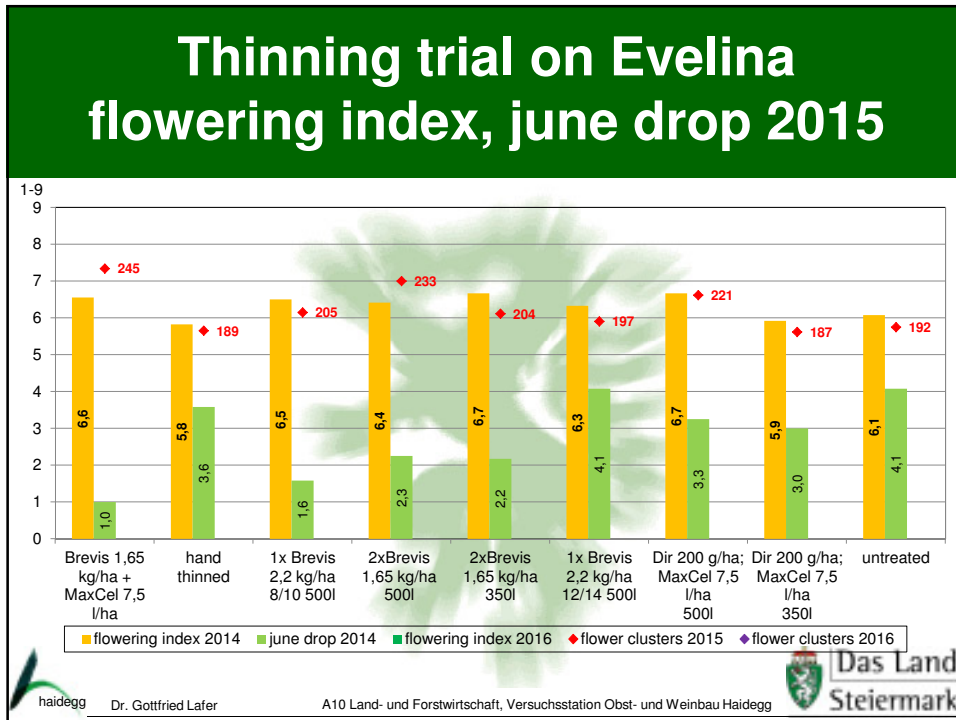
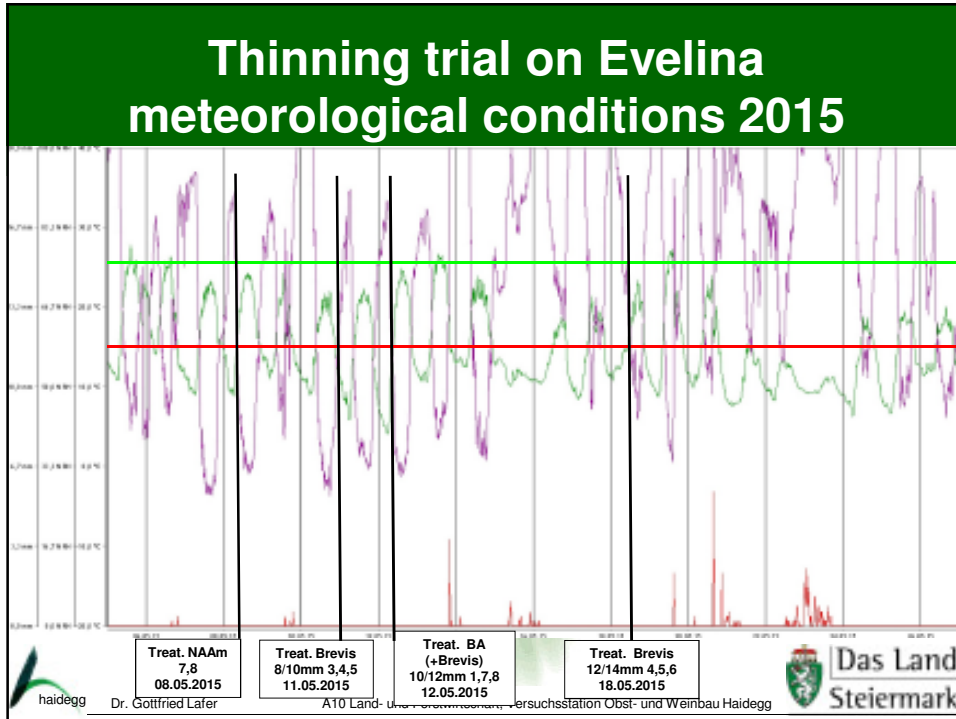


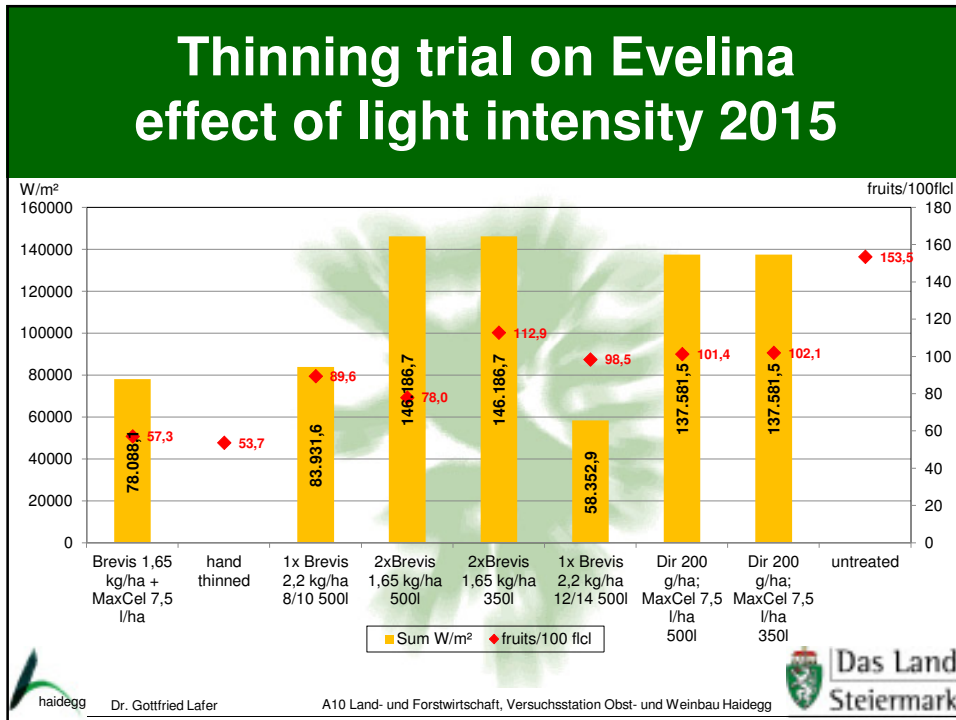
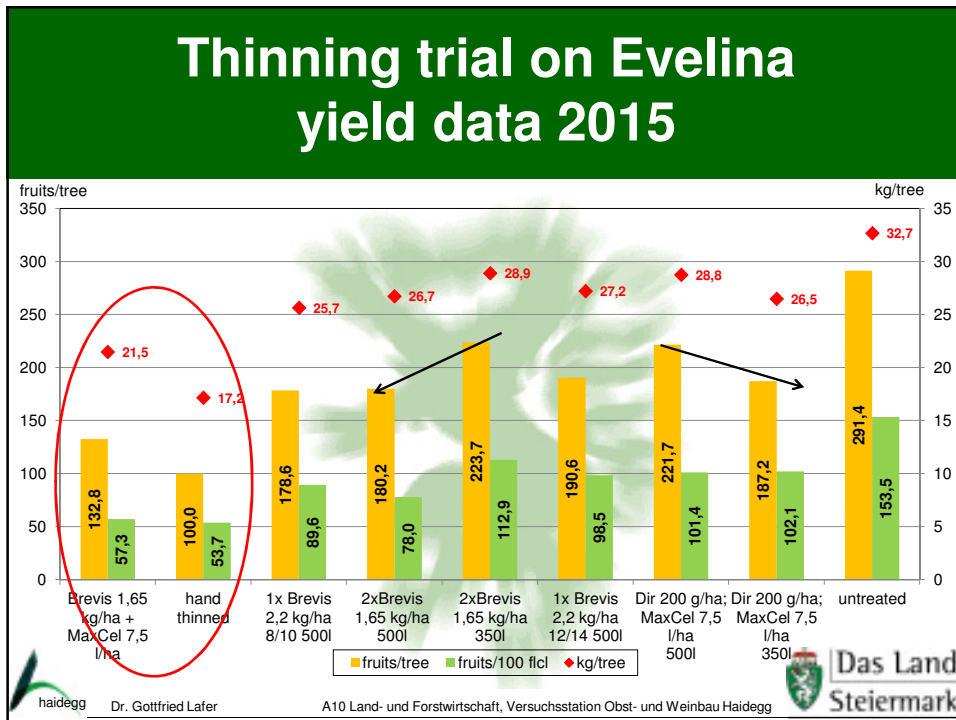
## Thinning trial on Evelina yield data 2014



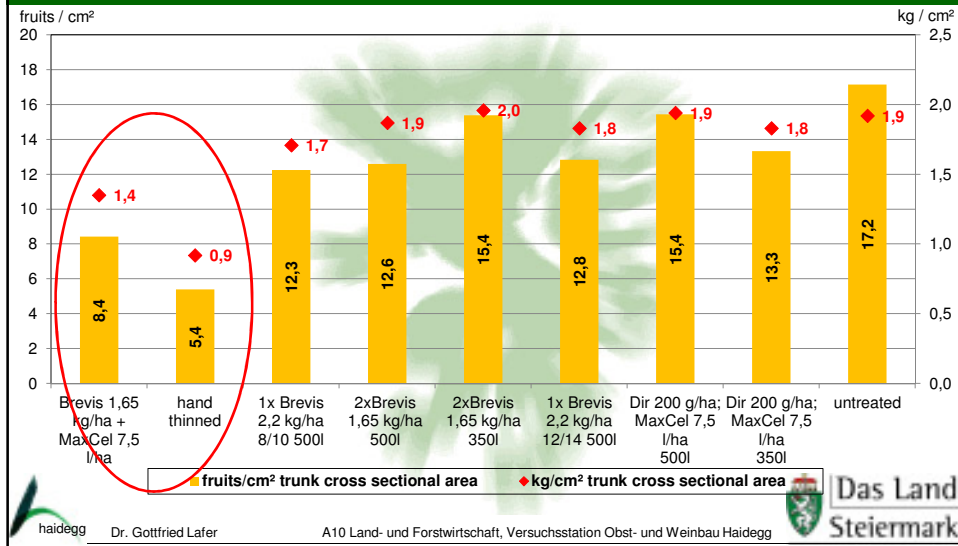
## Brevis® - Thinning trial on Evelina® 2015

- Metamitron 495 ppm + BA 300 ppm:** Tank mix Brevis 1,65 kg/ha + MaxCel 7,5 l/ha at 10/12mm king fruit diameter - old wood (KFD OW) with 500 l/ha
- hand thinned** (6 fruits/cm<sup>2</sup> TCSA)
- Metamitron 660 ppm:** Brevis 2,2 kg/ha at 8/10mm KFD with 500 l/ha
- a) **Metamitron 495 ppm:** Brevis 1,65 kg/ha at 8/10mm KFD with 500 l/ha  
b) **Metamitron 495 ppm:** Brevis 1,65 kg/ha at 12/14mm KFD with 500 l/ha
- a) **Metamitron 707 ppm:** Brevis 1,65 kg/ha at 8/10mm KFD with 350 l/ha  
b) **Metamitron 707 ppm:** Brevis 1,65 kg/ha at 12/14mm KFD with 350 l/ha
- Metamitron 660 ppm:** Brevis 2,2 kg/ha at 12/14mm KFD with 500 l/ha
- a) **NAAm 200 ppm:** Dirigol 200 g/ha 10-12 days after full bloom (DAFB) with 500 l/ha  
b) **BA 300 ppm:** MaxCel 7,5 l/ha at 10/12mm KFD with 500 l/ha
- a) **NAAm 286 ppm:** Dirigol 200 g/ha 10-12 days after full bloom (DAFB) with 350 l/ha  
b) **BA 428 ppm:** MaxCel 7,5 l/ha at 10/12mm KFD with 350 l/ha
- untreated** (without thinning)

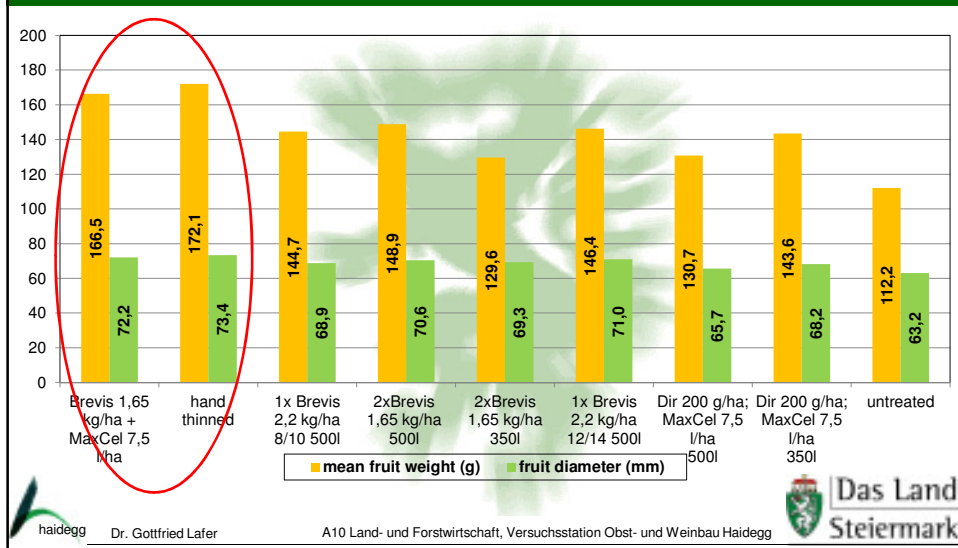


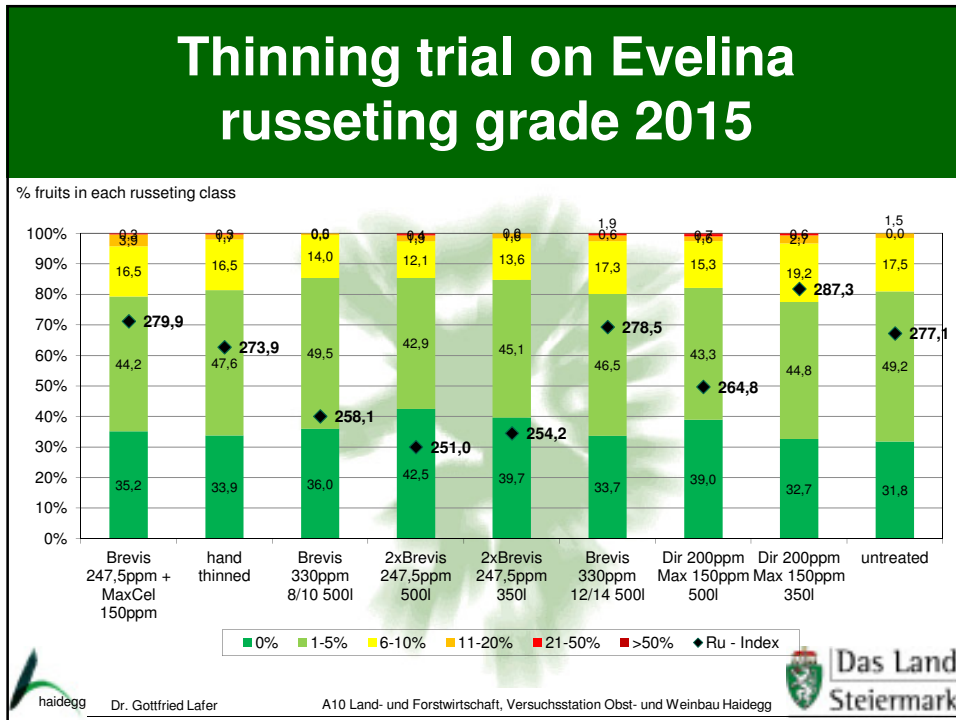
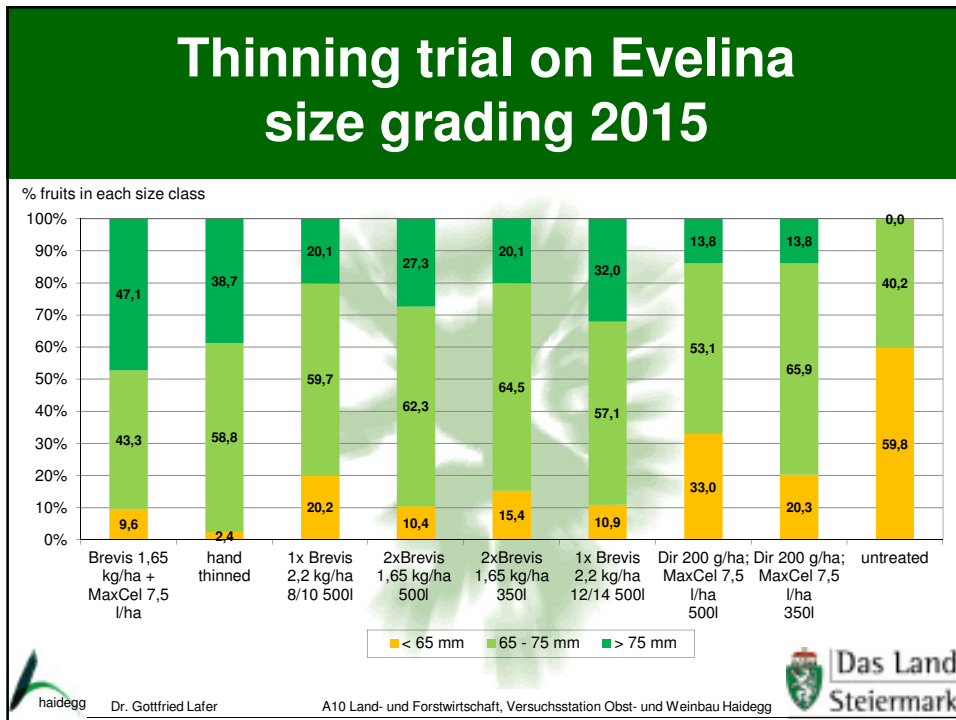


## Thinning trial on Evelina crop density and yield efficiency 2015

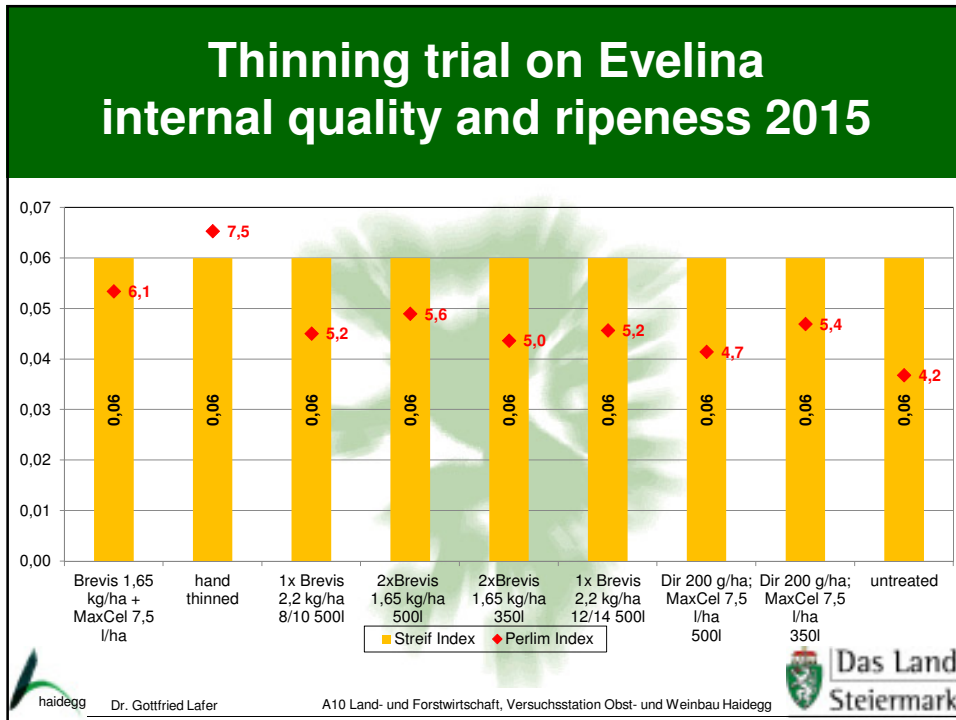
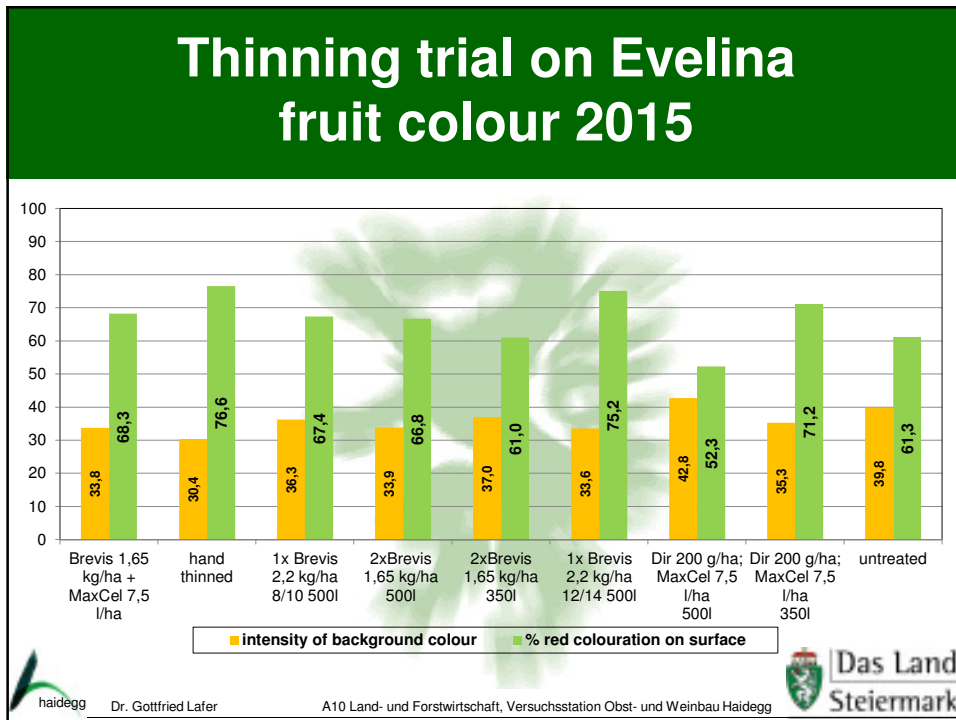


## Thinning trial on Evelina average fruit weight, fruit diameter



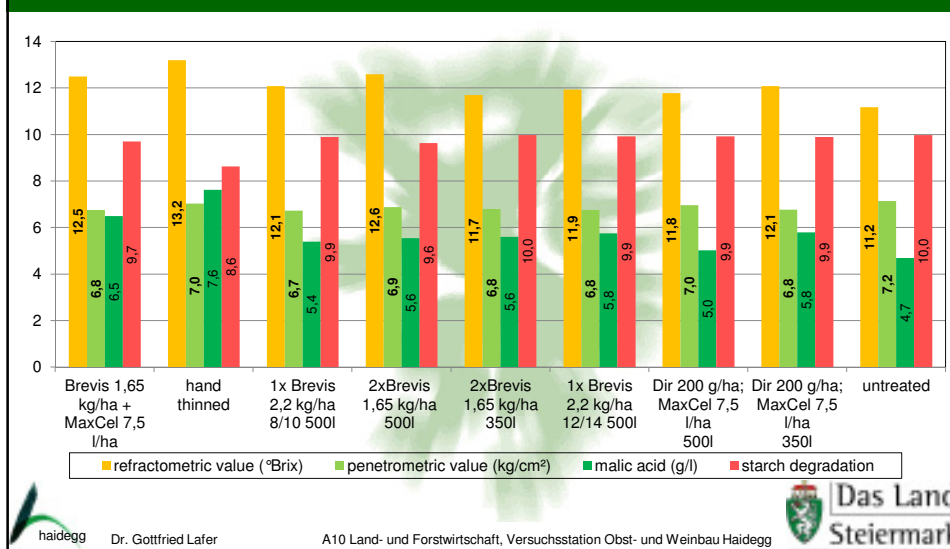








## Thinning trial on Evelina Internal quality and ripeness 2015



## Brevis® - Thinning trial on Evelina conclusion 2013 - 2015

- Concentration of Metamitron had a strong influence on thinning efficacy. Final fruit set, number of fruits per tree and crop density (fruits/cm<sup>2</sup> TCSA) were influenced by the different spray volumes heavily.
- Only slight phytotoxic effects (**leaf damages 3,0**) were observed after high concentrated Metamitron (990 ppm) application; only a few leaves were affected strongly by double application of Metamitron in the overlap zones.
- **No significant differences in thinning behaviour of Brevis between the two different spray volumes of 1.000 and 500 l/ha**
- Low volume spraying of Brevis (250 l/ha and 350 l/ha) showed the weakest thinning activity (but significant differences to untreated check)
- **A minimum spraying volume of 500 l/ ha is recommended to optimize the thinning efficacy of Metamitron.**

## Brevis® - Thinning trial on Evelina conclusion 2013 - 2015

- Standard thinning programme for Pinova (NAAm 12 DAFB followed by BA at 10/12 mm KFD) performed no sufficient thinning results (results were not affected by spraying volumes significantly, but a trend to lower spray volume).
- Severe meteorological conditions (low temperatures combined with poor light conditions) during thinning period may affect thinning efficacy of NAAm and BA negatively



Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg



## Brevis® - Thinning trial on Evelina conclusion 2015

- **Tank mix with Metamitron + BA** (Brevis 1,65 kg/ha + MaxCel 7,5 l/ha) performed optimal thinning results
- **Additional thinning effect was observed with the tank mix of Metamitron + BA (Brevis + MaxCel)**
- Single application of the tank mix Metamitron + BA (Brevis 1,65 kg/ha + MaxCel 7,5 l/ha) was as effective as the repeated application of Brevis 2 x 1.65 kg/ha.
- Further investigations are necessary to understand the mode of action and to optimize the application of Metamitron + BA
- More trials with Metamitron in combination with other compounds (NAA, ProhexadioneCa, ACC etc.) are necessary (to find out interactions)



Dr. Gottfried Lafer

A10 Land- und Forstwirtschaft, Versuchsstation Obst- und Weinbau Haidegg

