

Welcome on

*Proeftuin*  
**Randwijk**



Dirk van Hees 13-3-2017



**FRUIT**CONSULT



## The Netherlands (NL)

### The Netherlands

- Latitude: 51-53 (Warsaw...)
- Maritime moderate climate
- Precipitation: 800 mm/year
- Soil: clay soil with  $\text{pH} > 6.5$
- CEC between 150-250  $\text{mmol}^+/\text{kg}$



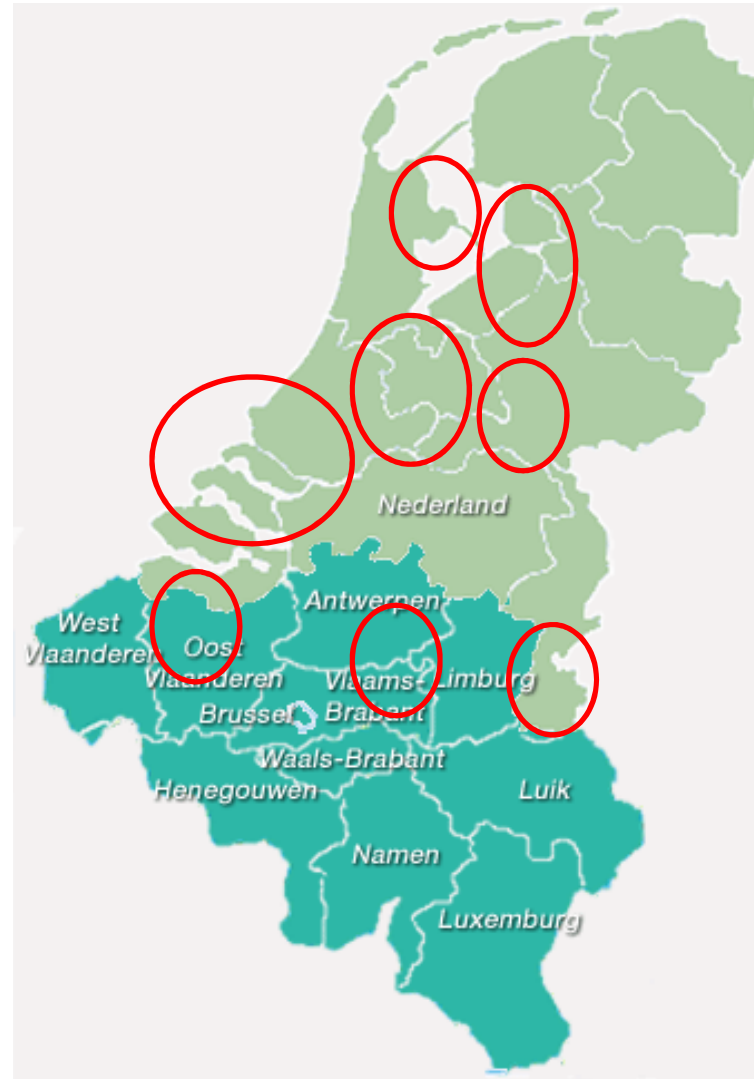
Exceptional adequate climate for  
Conference-pears



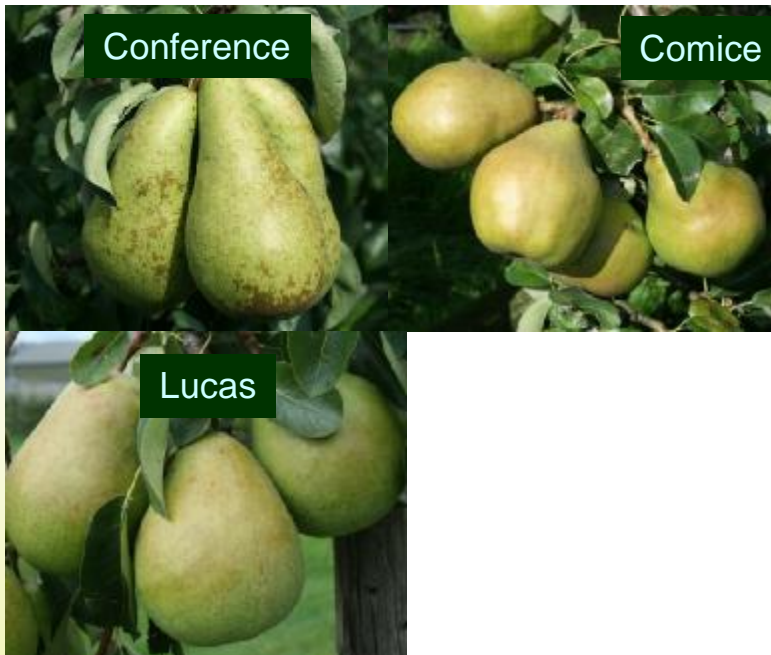


## Netherlands:

- 7000 ha apples /  
9000 ha pears







### Varieties:

- 80 - 90% => Conference
- 5% Doyenne du Comice
- 5% Beurré Alexandre  
Lucas, Triomphe
- Xenia, Sweet Sensation,  
Migo
- Concorde, Verdi –  
pollination
- No Condo, Abate Fétel,  
Packhams, Williams, Roja
- Looking for red-color pears

# NL



Elstar



Jonagold

## VARIETIES:

- 50 % => Elstar – mutation
  - 30 % Jonagored/ Jonaprince
  - 10 % Boskoop / Golden
  - 10 % Club varieties Kanzi, Junami, Wellant
- 
- No Gala !



Golden - Boskoop

# Introduction

## Fruitconsult:

- Privat consulting organization
- Consulting in apple, pears, cherries and plums
- 10 consultants
  - Ø 7 technical fruit management
  - Ø 3 crop protection
- Main area: Holland + Belgium
  - Ø Around 350 fruit growers
- Others: Germany, Italy, Poland, Turkey, England, etc..





- Fruitconsult:
- Total management of the research centre in Holland: Proeftuin Randwijk
- Partnership in Proeftuin Randwijk:
  - ØWPR => Wageningen University
  - ØNFO => Dutch Fruitgrowers Association
  - ØCAF => Cooperative Fruitconsulting





*Proeftuin*  
**Randwijk**

16 ha - 12 ha now planted

2016: 80 trials en demo's

3,5 ha  
peer

7,4 ha  
appel

0,5 ha  
pruim

0,6 ha  
kers





*Proeftuin*  
**Randwijk**   



# FOCUS THEMES IN RANDWIJK

- Crop protection -> **sustainability**
  - Ø fungi in wet climate
    - o.a. scab, mildew, postharvest, Nectria
  - Ø insects
    - o.a. Psylla, woolly aphid, Anthonomus, red spider
  - Ø Weedcontrol
  - Ø Emmision
  - Ø Green crop protection
    - Ø Biocids
    - Ø Plant enhancers
    - Ø Leaf fertilisation

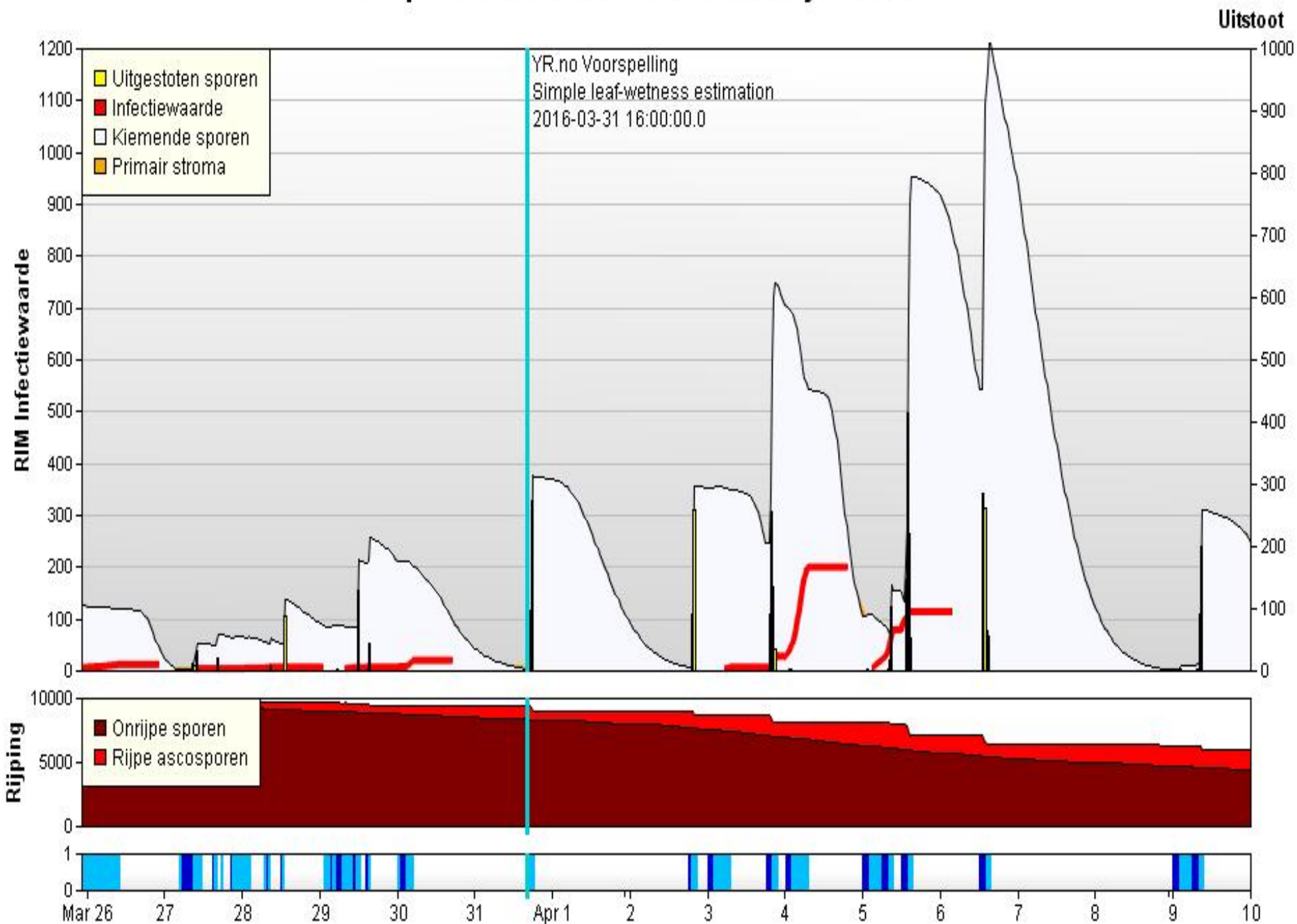


Modern equipment which are equal to  
orchard sprayers  
- stay as close to practise as possible -





# RIMpro-Venturia locatie: Randwijk - 2016



# Emmissionfield (large borders)



# FOCUS THEMES IN RANDWIJK(2)

- Crop management
  - growthregulation
    - rootstocks
    - Pruning
    - Fruitset / fruitthinning
  - Fertilisation / water
  - Varieties
  - Training systems
  - Cooling and storagetechniques





# Time and dosage Brevis on Elstar 2015

## Spraying data

- 22 May - 9,6 mm
- 1 Juni - 16 mm
- 22 May + 1 juni

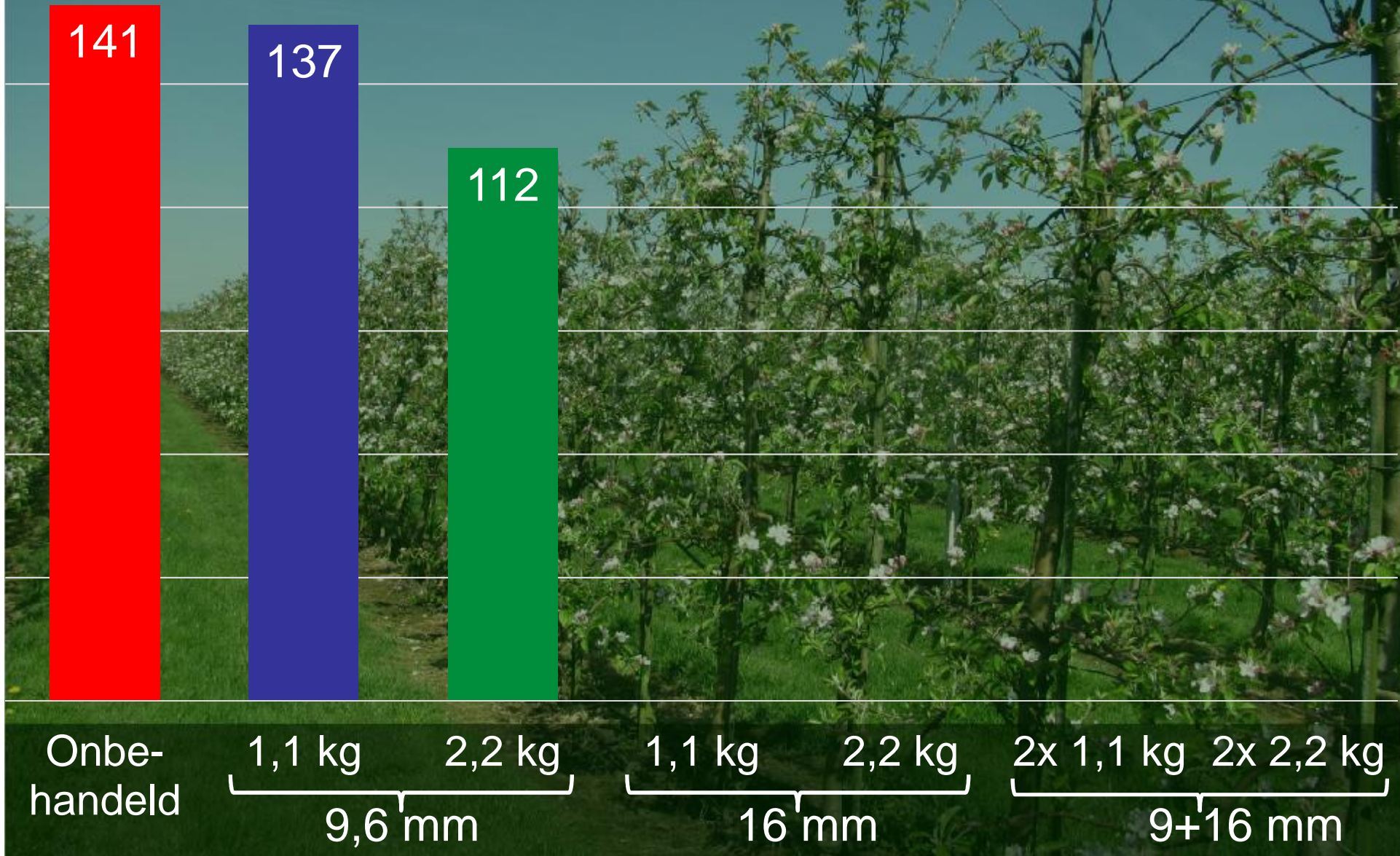
## Dosage

- 1,1 kg/ha
- 2,2 kg/ha



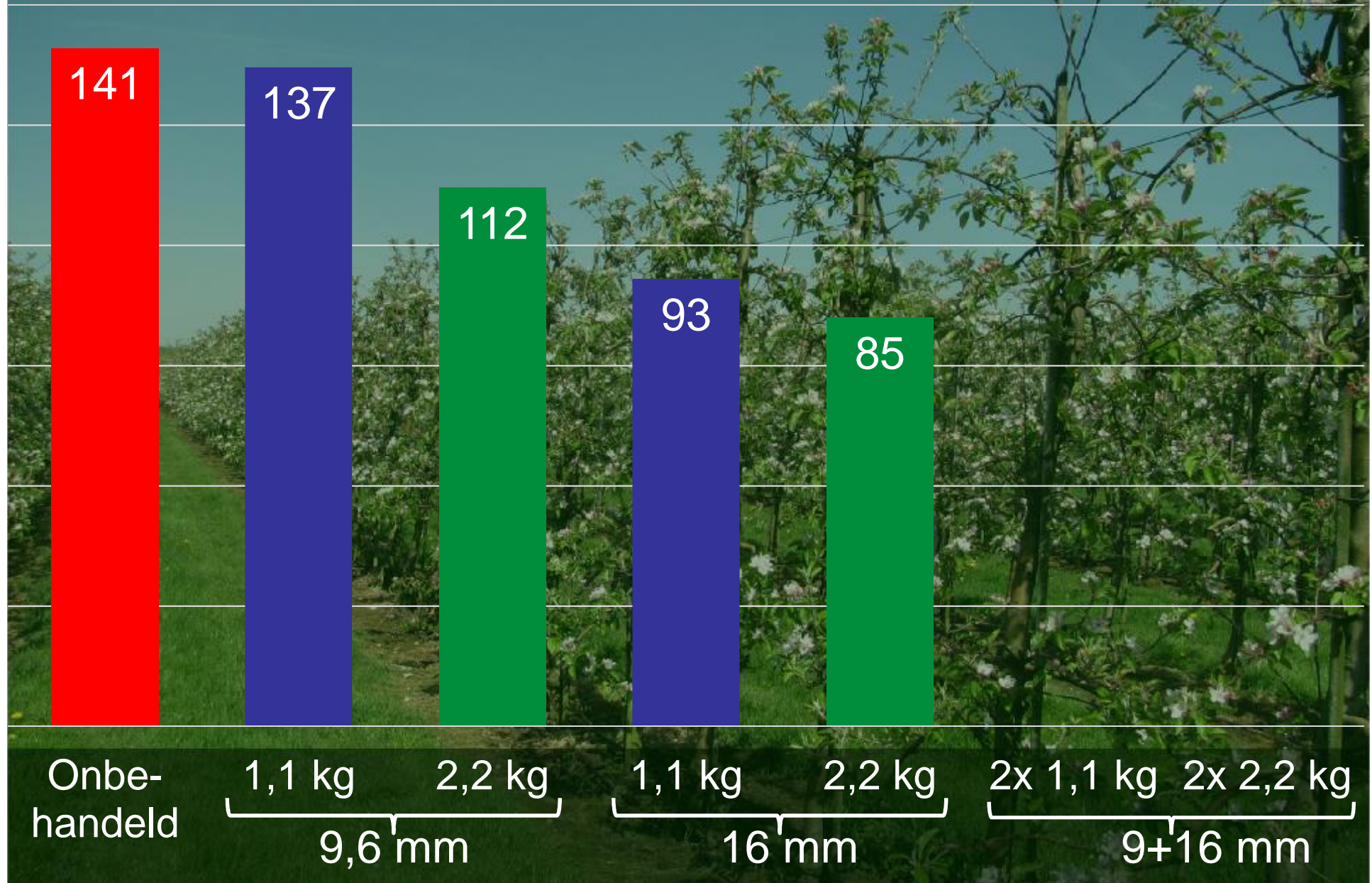


# Fruits per boom



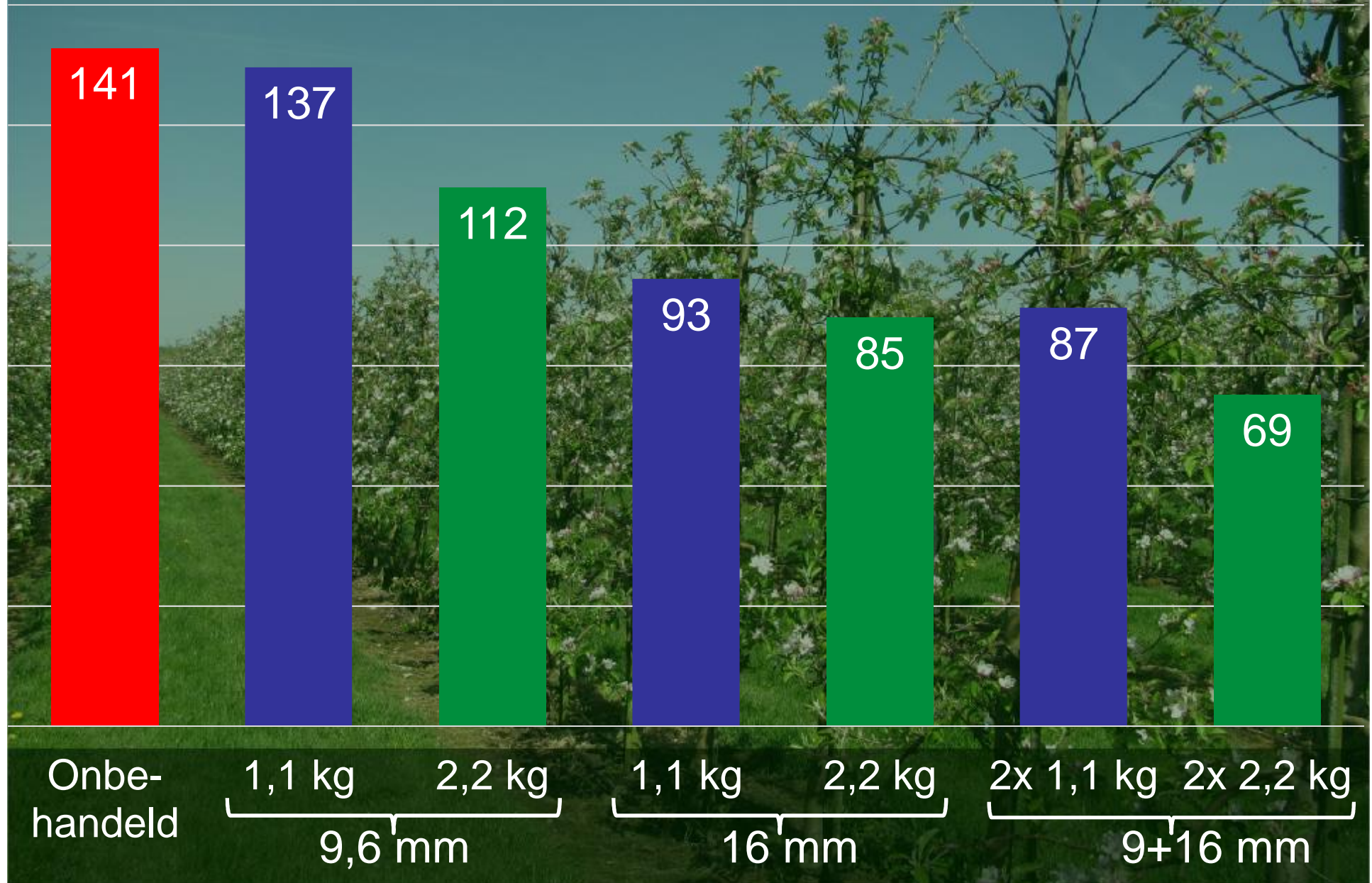


# Aantal vruchten per boom





# Aantal vruchten per boom



# Does Brevis work local?

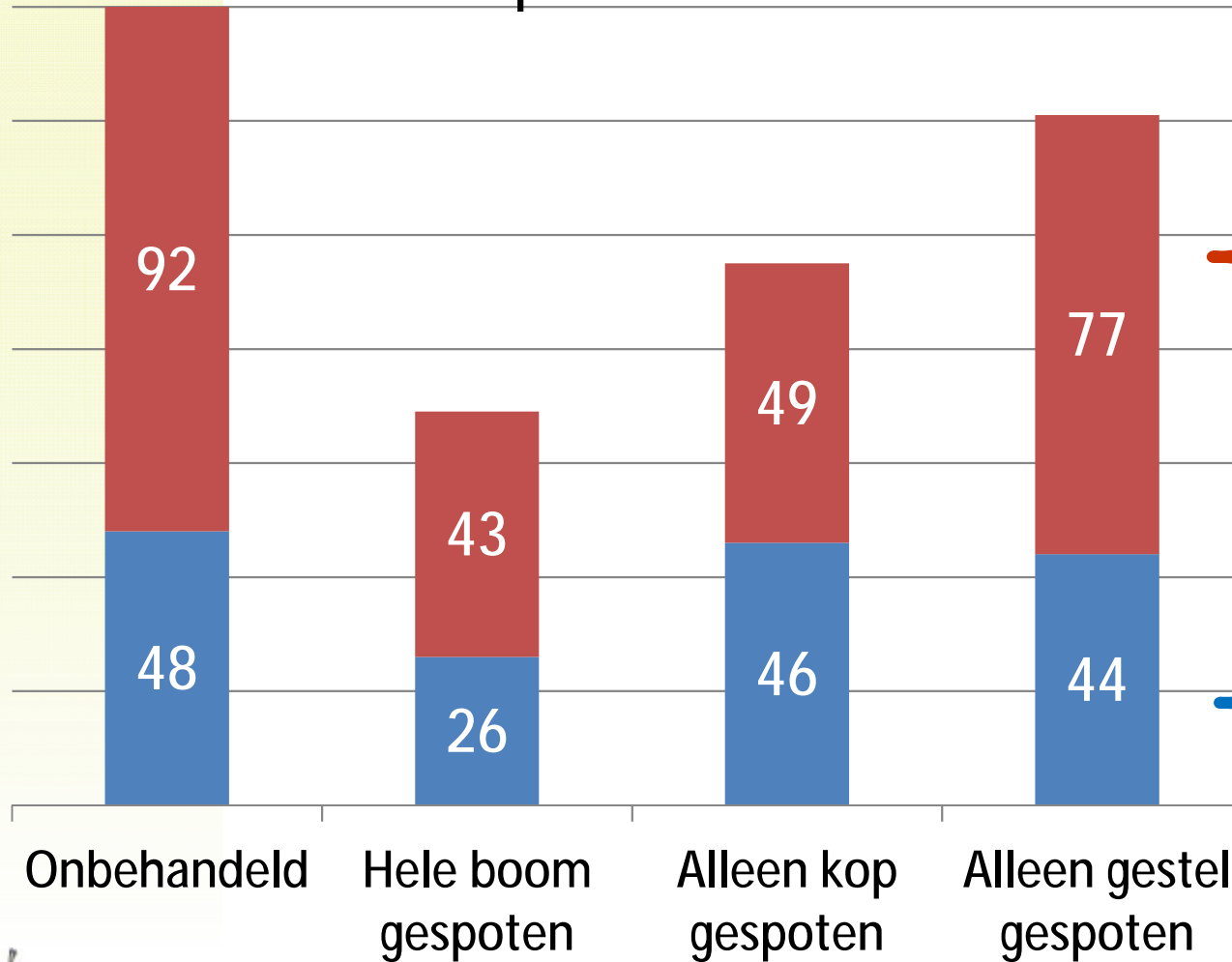
- Ø Total tree  
2 x 2,2 kg/ha
  - Ø Only the top  
With upper 4 nozzles
  - Ø Only table  
With lowest 4 nozzles
- Same concentration
- 2 x 1,1 kg/ha
  - 50% of the nozzles open





# Local working of Brevis

Fruits per tree



# Experiences Brevis Randwijk (1)

- Brevis effective thinning agent
  - Thinning depend on dosage and time
  - On Elstar effective from 8-16 mm
    - Last years better result from 12-16 mm
  - On Conference mostly effective from 11-14 mm
  - Dark period with warm nights can give heavier result
    - Difficult to say exactly at the moment
- Ø More experience is necessary





## Experiences Brevis Randwijk (2)

- Correct dosages depends on the orchard
  - Amount and strength of the flowers
  - Pollinators
  - Fruit set

∅ Experience!
- When small amount of thinning is needed, Brevis can give easily over thinning
- Not enough tools to see it a second treatment is necessary.



# Other points:

- Flower bud formation on pears, especially with high dosages.
- Local treatments are possible (only tops)
- The amount of growth has an effect on the result
- Be carefull, especially oil formulated products around Brevis are very dangerous!
- Rain after an application can make the effect stronger / too strong
- Never spray on wet leaves





Conference  
MC Q-Eline



Cepuna  
MC Eline



Gräfin  
Gepa

Celina  
e.a.



New rootstock  
Quince Eline

- More winter hardiness
- Smoother fruits

New (red) pear cultivars





Natyra



Kanzi



Miniapolis



Honeycrisp







## IMPROVEMENT OF COLOR / QUALITY AND STRAIN CHOICE OF ELSTAR





Elstar strains

Make the good choice



# Elstar strains

demo – proeftuin Randwijk

- Elstar Altijd Raak! project
- Project team: NFO, WPR, Fruitconsult, CAF, DLV
- Planted in May 2012
- M9 (Elshard with tst Golden)
- Half with and half without hail netting



Bougie



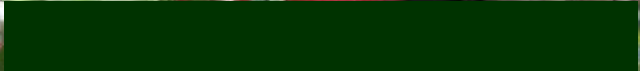
PCP



Elrosa



Van der Zalm



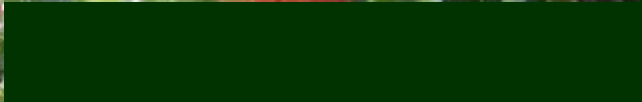
Elshof



Stechmann



Elshard

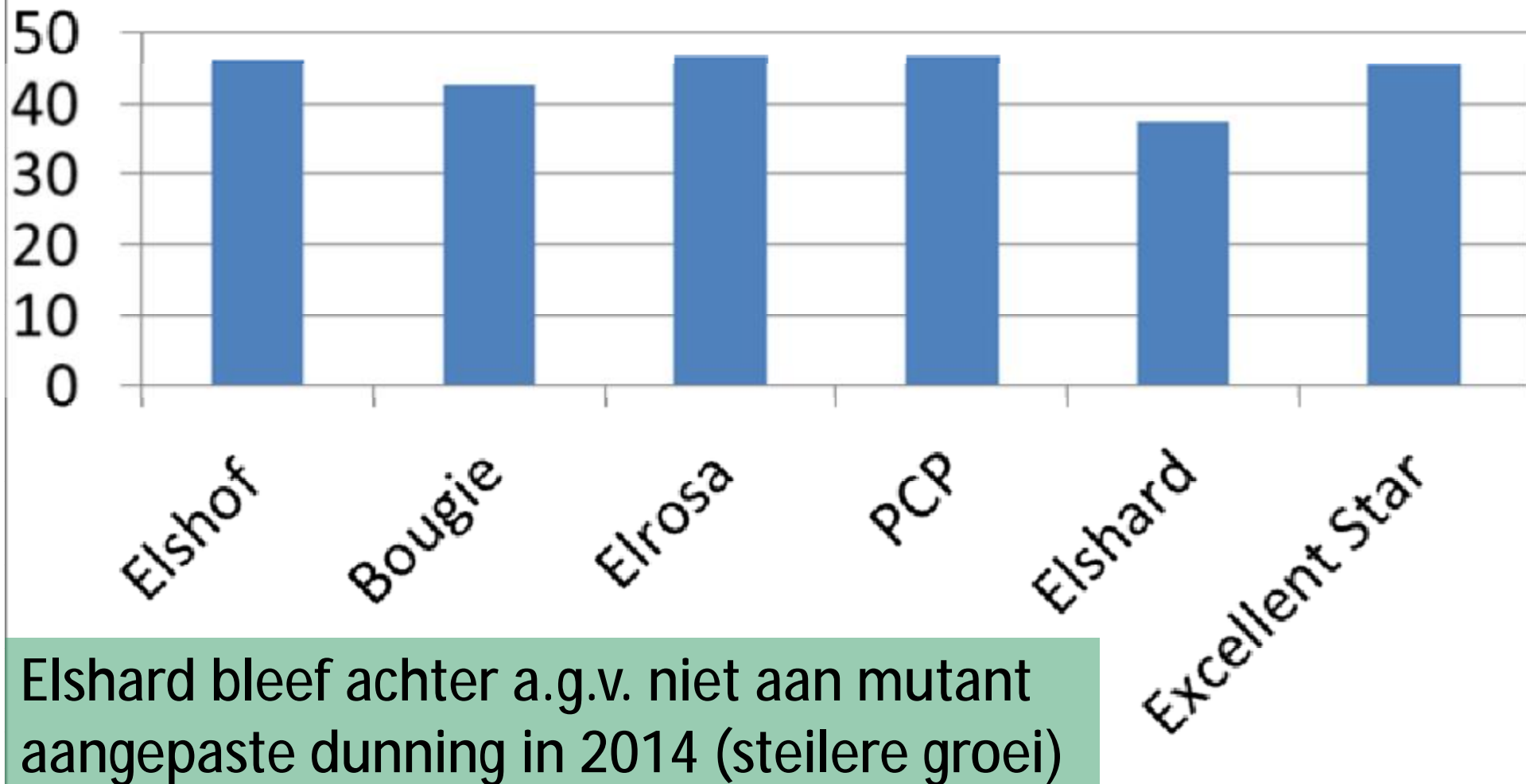


Excellent Star



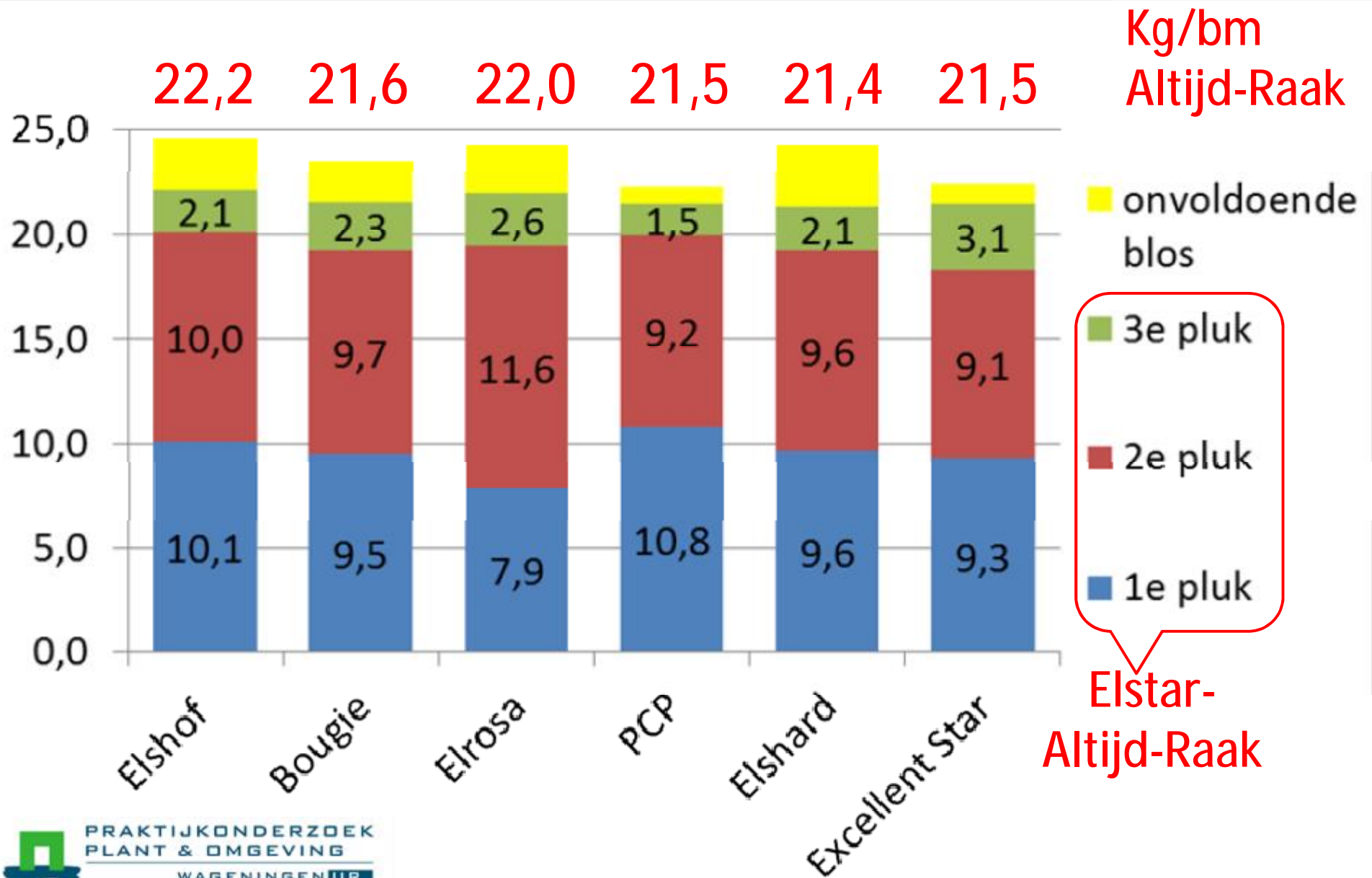
# Productie 2013 – 2015

Kg/boom Elstar-Altijd-Raak  
2013+2014+2015



Elshard bleef achter a.g.v. niet aan mutant  
aangepaste dunning in 2014 (steilere groei)

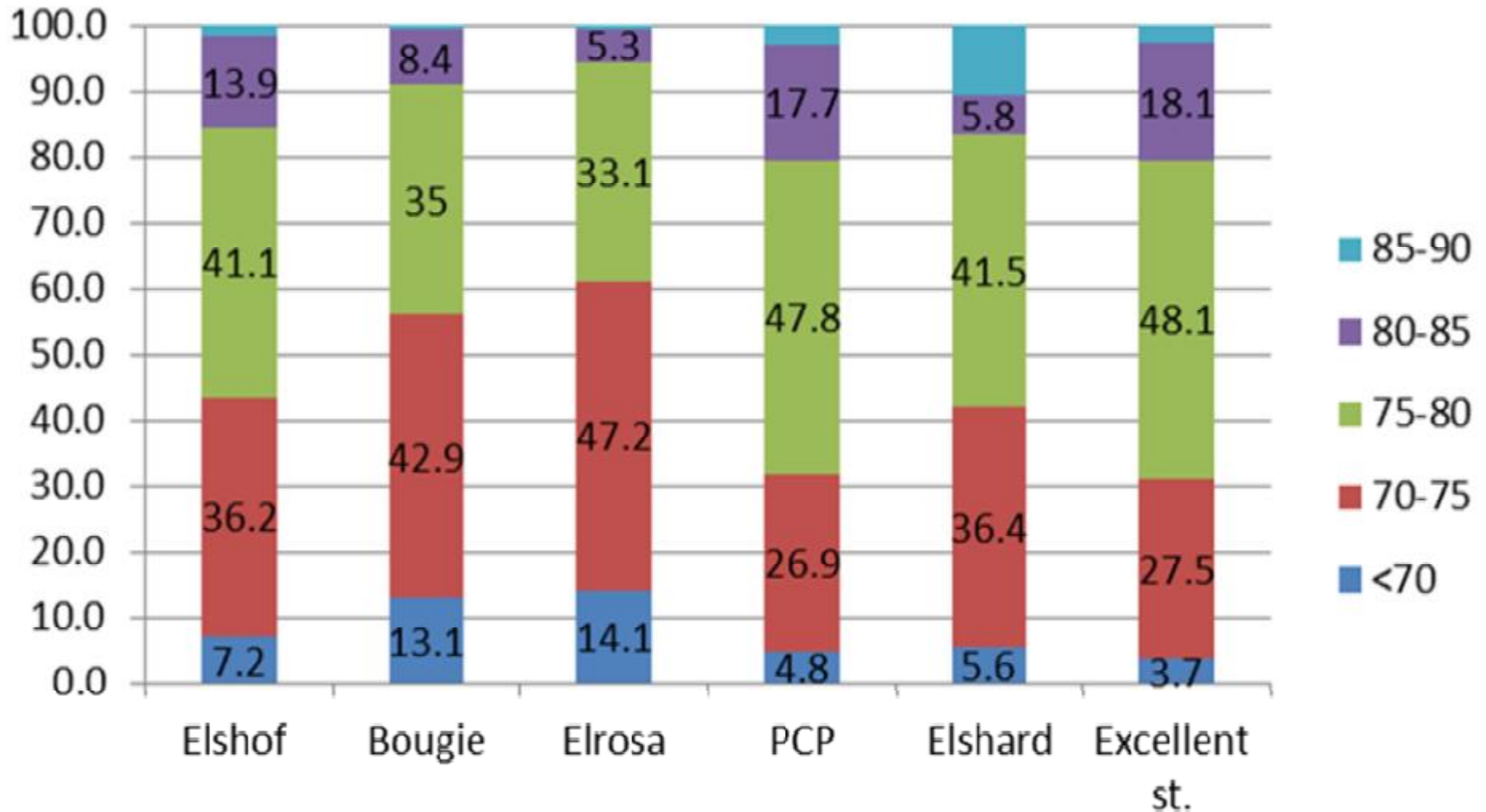
# Production 2016 (kg/boom)





# Maatsortering 2016

## Maatverdeling per mutant in 2016





- Clear red
- Earliest pick
- Yellow background colour

Bougie







Elrosa

- Clear red
- High production
- High % class I
- Pick little bit later
- Sugar content little bit lower







- Little striped
- Growth more steep
- Picking time later
- Lowest production
- Firmness bit higher

## Elshard







- Clear red
- Average picking time
- High production
- Lowest % klasse I
- Firmness a bit lower

Elshof







- Clear red
- Growth is a bit steeper
- Picking time: average
- Green background colour
- No / very little russetting

## Excellent Star







- Clear red
- Max. 2 fruits/cluster
- Earlier picking time
- Biggest fruit

PCP







- Striped
- Earlier picking time
- High production
- High % klasse I

Stechmann







- Striped
- Average picking time
- Lowest production
- High % klasse I
- High Firmness
- High sugar content

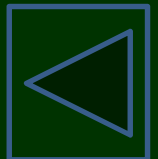
Van der Zalm



# Elstar strains

demo – proeftuin Randwijk

- Striped strains Stechmann and Van der Zalm: no advice for planting
- Elshof: No advice for planting
- Elshard and Excellent Star the growth is more steep
- PCP the June drop is heavier
- The clear and smooth strains look in the bin the same.





# Results demo colour improvement with Ethrel on Elstar 2015



Untreated



1x 200 ml Ethrel  
3 weeks before picking



2x 200 ml Ethrel  
6 en 3 wk before 1st p.

1<sup>st</sup> picking 5 days earlier and 2<sup>th</sup> picking 7 days  
no loss of quality  
no effect on shelf life



# Picking data 2016

Elstar: 9, 16, 26 september

Jonagored: 3, 13, 24 oktober

- Picking on 50% blos colour
- Directly after 3th pick the apples with not enough colour were picked

Total production :

Elstar: 21 kg/bm

Jonagold: 36 kg/bm



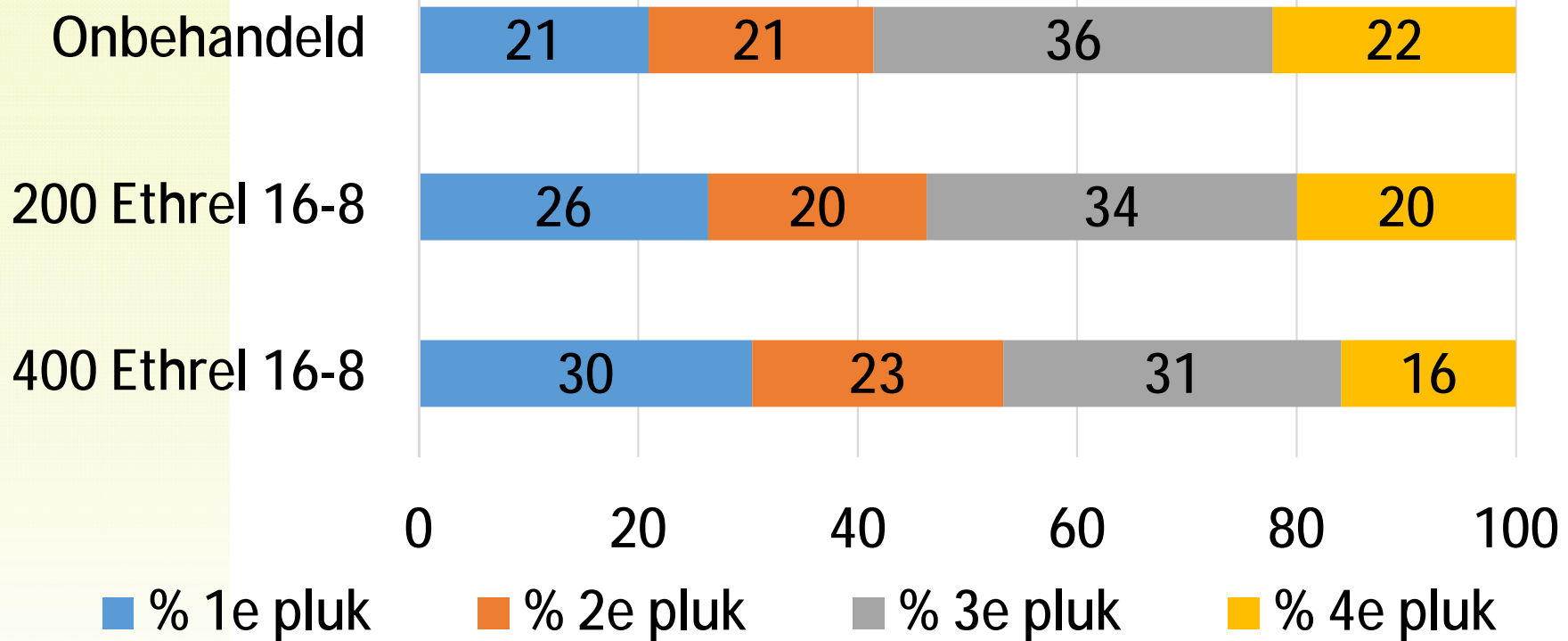
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# Results Elstar

Picked kg in % 1<sup>e</sup>, 2<sup>e</sup>, 3<sup>e</sup> en 4<sup>e</sup> pluk



- Ethrel 10 days before picking same results as untreated

## firmness Elstar at harvest(kg/cm<sup>2</sup>)

Object	1 <sup>st</sup> p.
Untreated	6,9
200 Ethrel -3 wk	7,0
400 Ethrel -3 wk	6,8



## firmness na mechanical storage half november

Elstar 1 <sup>st</sup> p.	direct	after 10 days 18°C
	+ SF	+ SF
Untreated	6,4	6,6
200 Ethrel -3 wk	6,5	6,6
400 Ethrel -3 wk	6,5	6,6



## firmness Elstar at harvest(kg/cm<sup>2</sup>)

Object	1 <sup>st</sup> p.
Untreated	6,9
200 Ethrel -3 wk	7,0
400 Ethrel -3 wk	6,8



## firmness na mechanical storage half november

Elstar 1 <sup>st</sup> p.	direct		after 10 days 18°C	
	+ SF	- SF	+ SF	- SF
Untreated	6,4	5,9	6,6	4,3
200 Ethrel -3 wk	6,5	5,9	6,6	4,4
400 Ethrel -3 wk	6,5	5,8	6,6	4,4

# Conclusions

- 200 or 400 ml/ha Ethrel **3 weeks** before 1<sup>st</sup> picking :
  - 5 - 10% more 1<sup>st</sup> picking
  - 2 - 6% less 4<sup>e</sup> picking with insufficient blush
- Ethrel **10 days** before picking had no effect on the colouring
- In 2015 Ethrel sprayed 3 weeks before picking did have more effect than 6 weeks before picking





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Thanks for your attention



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