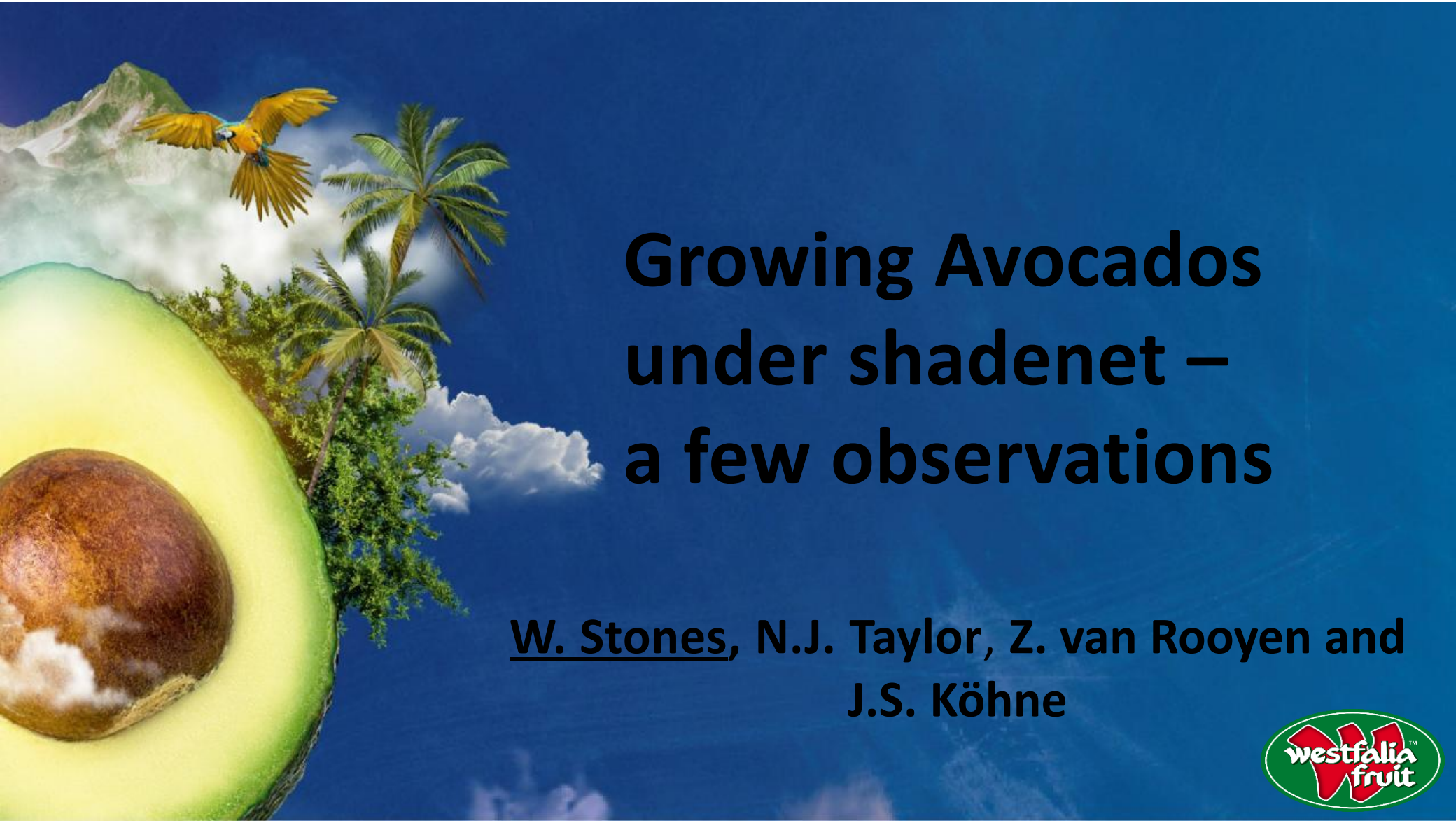


Growing Avocados under shadenet – a few observations

W. Stones, N.J. Taylor, Z. van Rooyen and J.S. Köhne

Overview

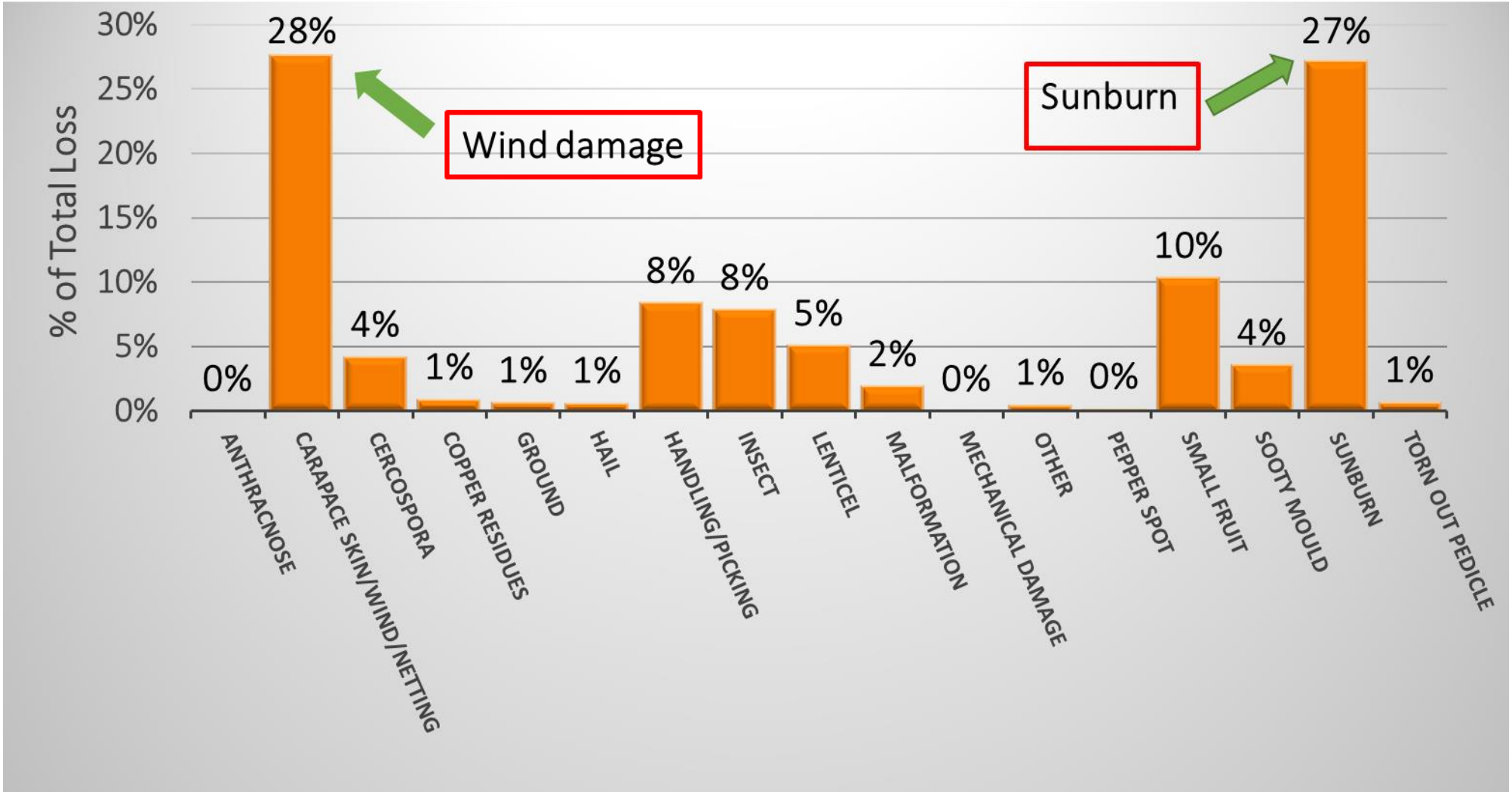
1. Introduction
    - Why cultivation of avocado under shadenet?

2. Observations
    - Yield, Fruit quality and fruit size
    - Net structure

3. Conclusions

Introduction

SA Avocado Growers Loss Factors Benchmark Study 2015 / 2016



Wind and sun damage for Westfalia SA

Farms	2016		2017	
	Wind	Sun	Wind	Sun
Westfalia SA	13%	22%	19%	12%

Wind and sun damage for Westfalia SA

Farms	2016		2017	
	Wind	Sun	Wind	Sun
Westfalia SA	13%	22%	19%	12%
External growers	15%	16%	20%	11%

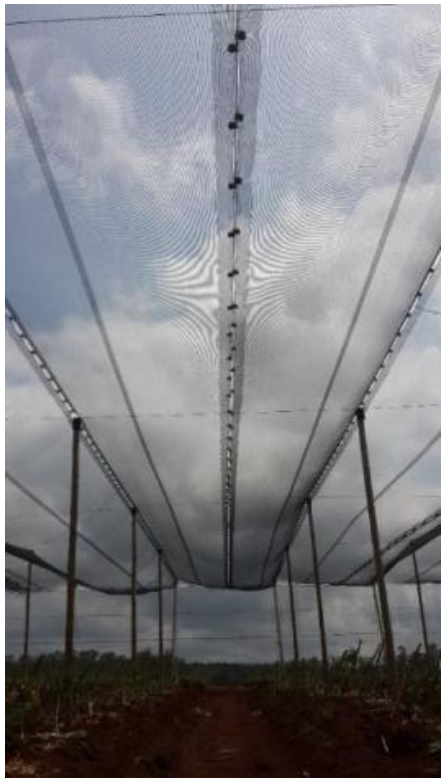
Wind and sun damage for Westfalia SA

Farms	2016		2017	
	Wind	Sun	Wind	Sun
Westfalia SA	13%	22%	19%	12%
External growers	15%	16%	20%	11%
Agrivet, Soekmekaar	27%	25%	38%	16%
Goedgelegen, Mooketsi	37%	14%	31%	6%

Shadenet at Agrivet,Soekmekaar

Planting date:	Dec. 2015
Colour net:	20% Black
Cultivar:	Gem
Spacing:	6 m x 2 m

Different hail purge methods

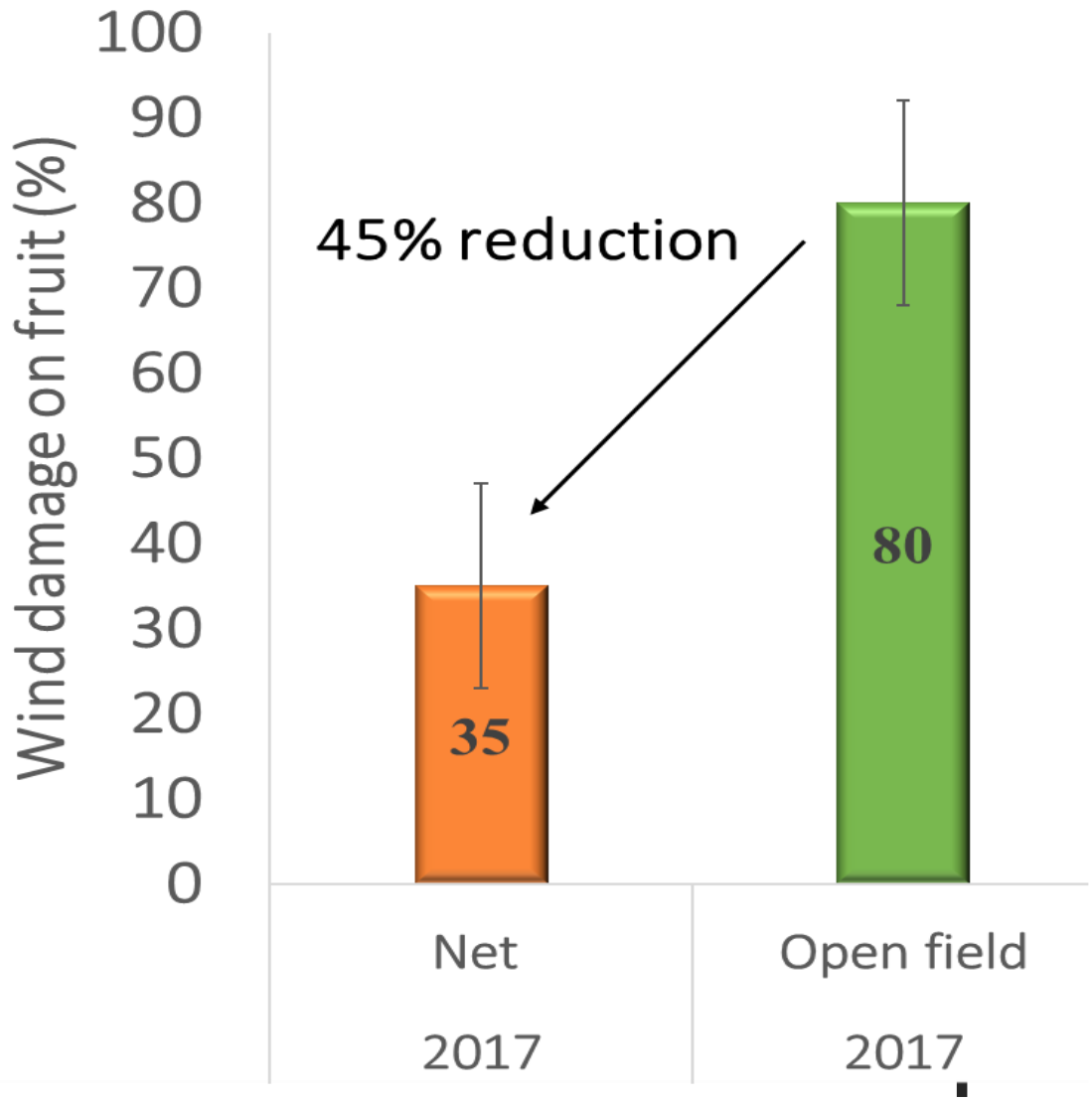


BUTTON

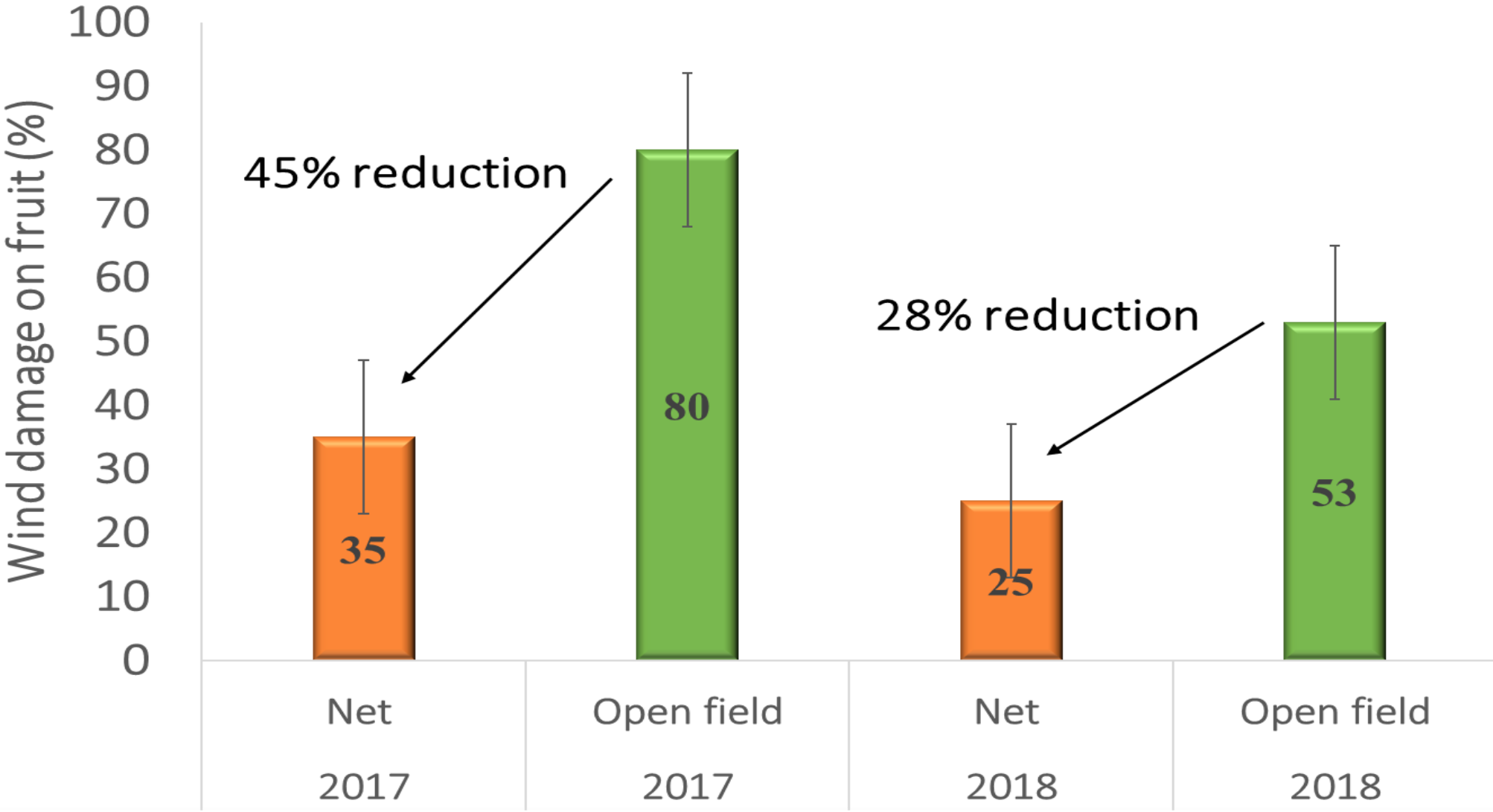
OVERLAP

FUNNEL

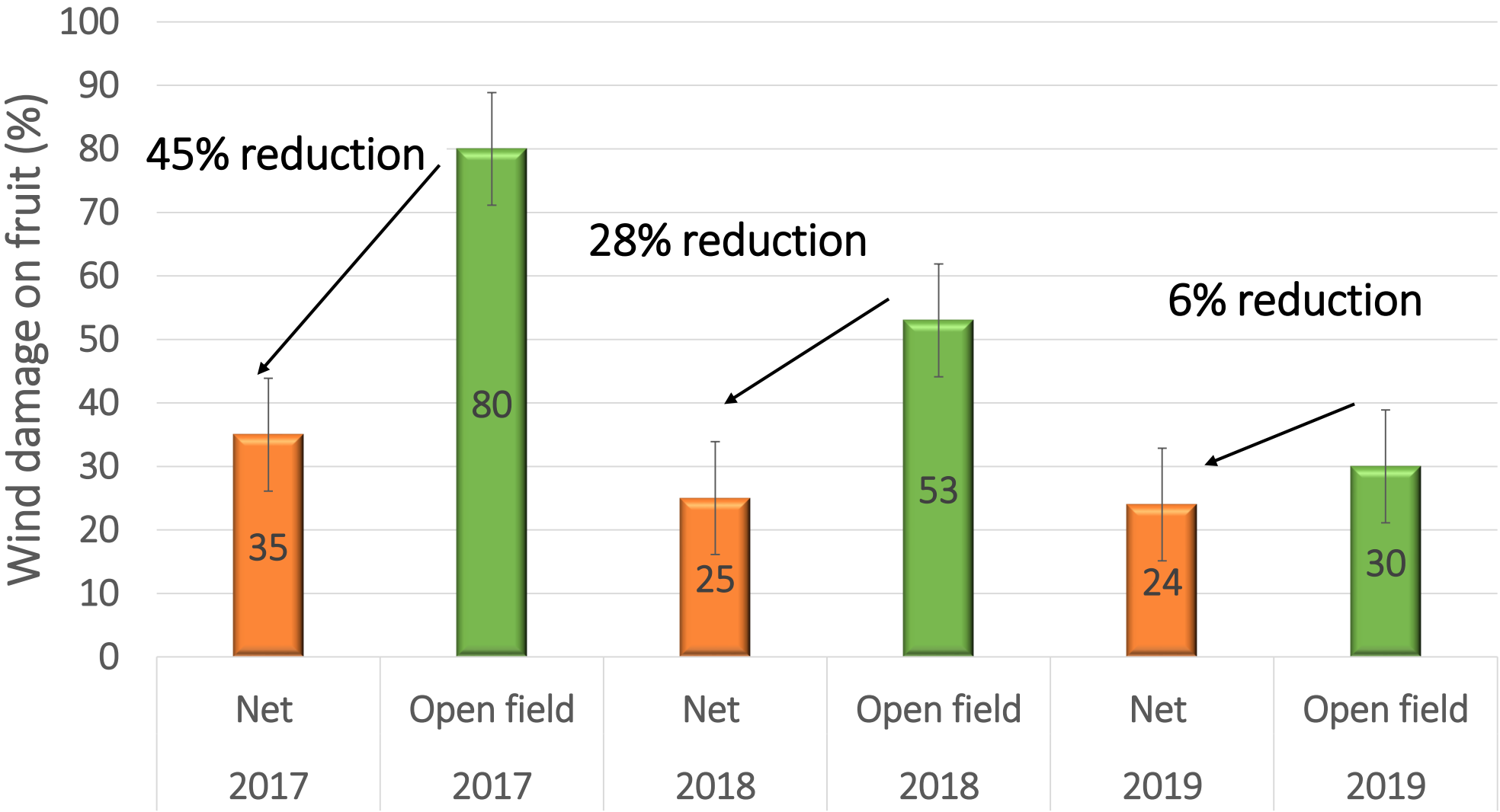
Observations: Wind damage?



Observations: Wind damage?



Observations: Wind damage?



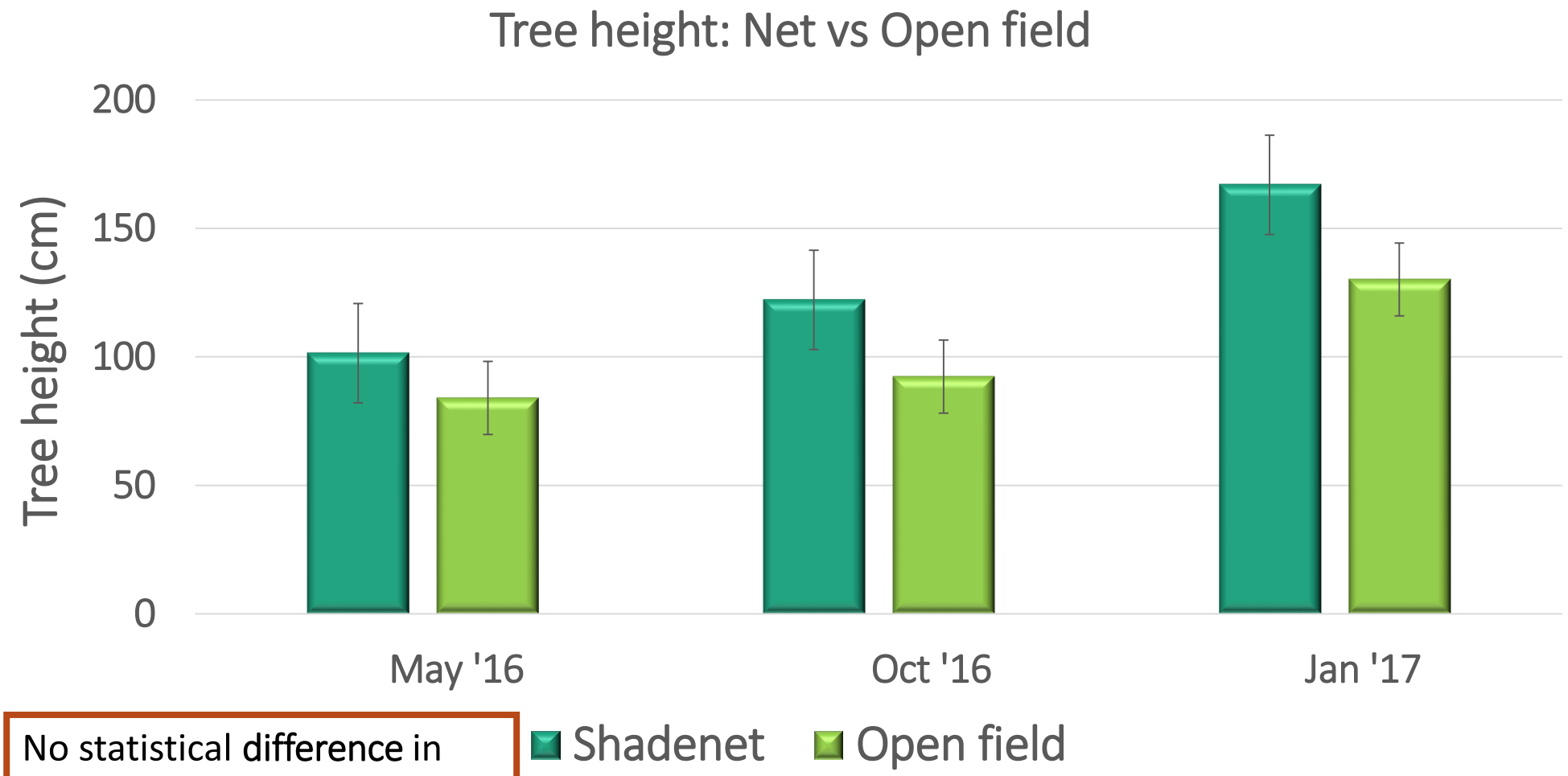
Wind damage: shadenet vs. open field

Shadenet fruit

Open field fruit

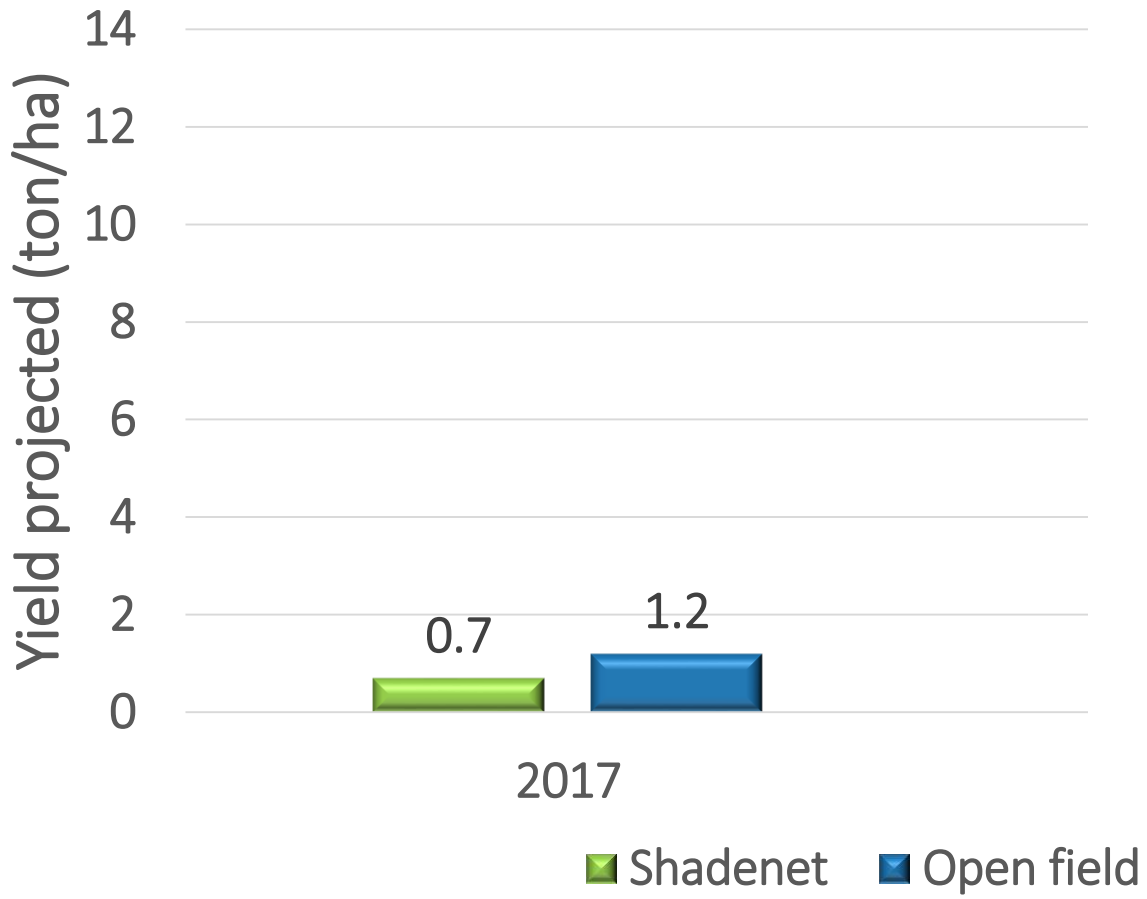
Shadenet fruit upon ripening

Other observations: Tree growth

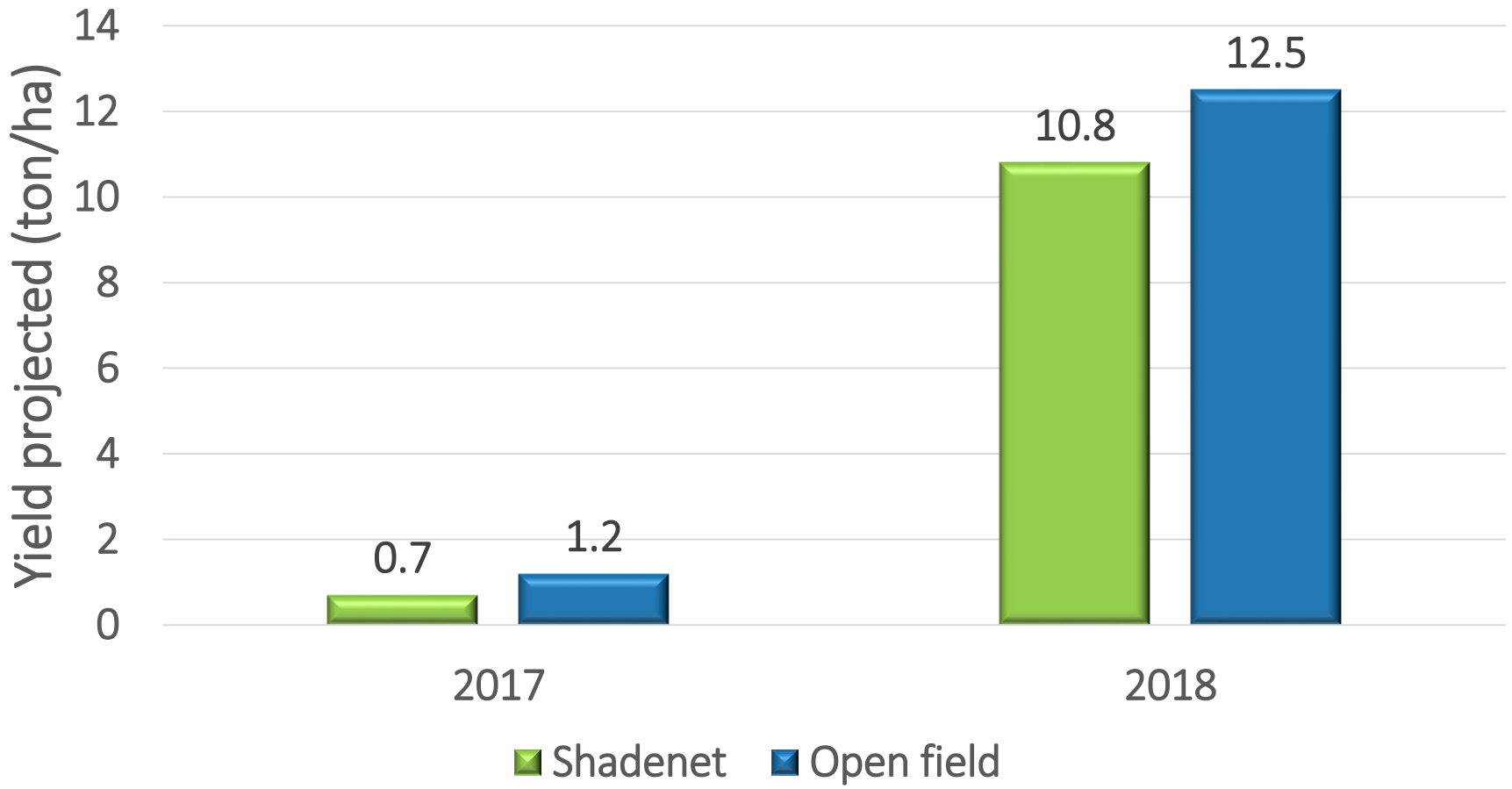


No statistical difference in stem circumference - net vs open field

Yield @ Agrivet

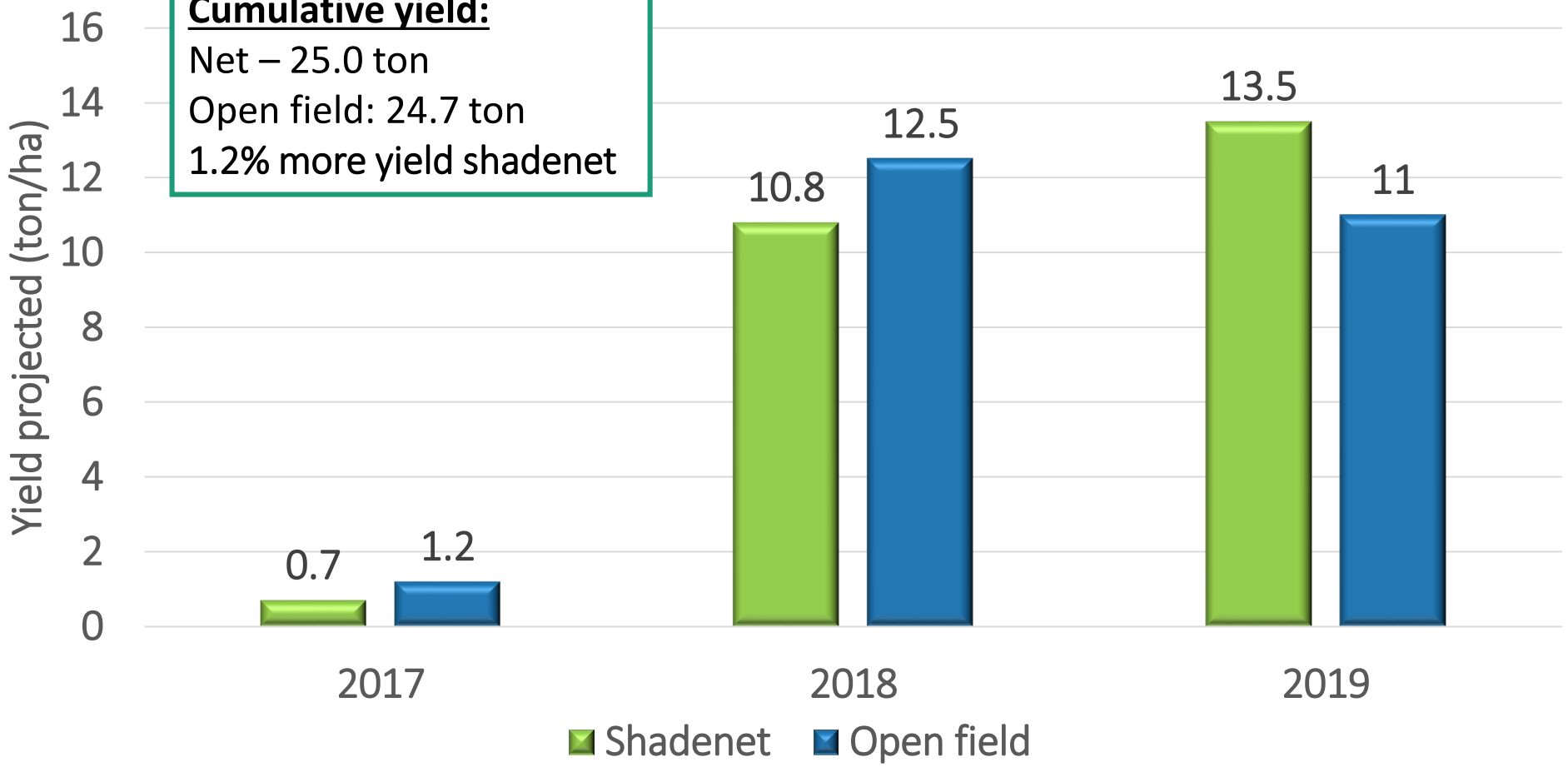


Yield @ Agrivet

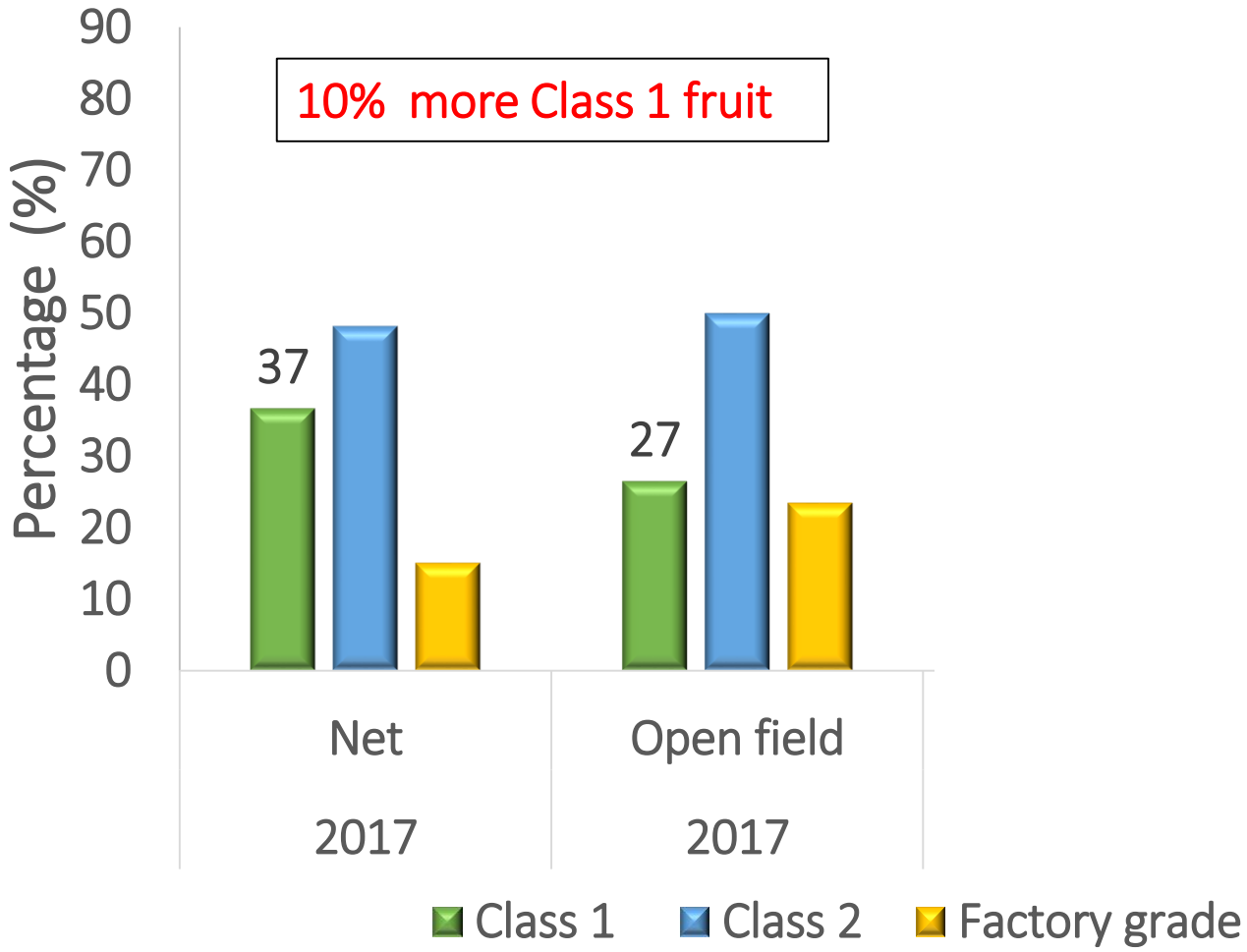


Yield @ Agrivet

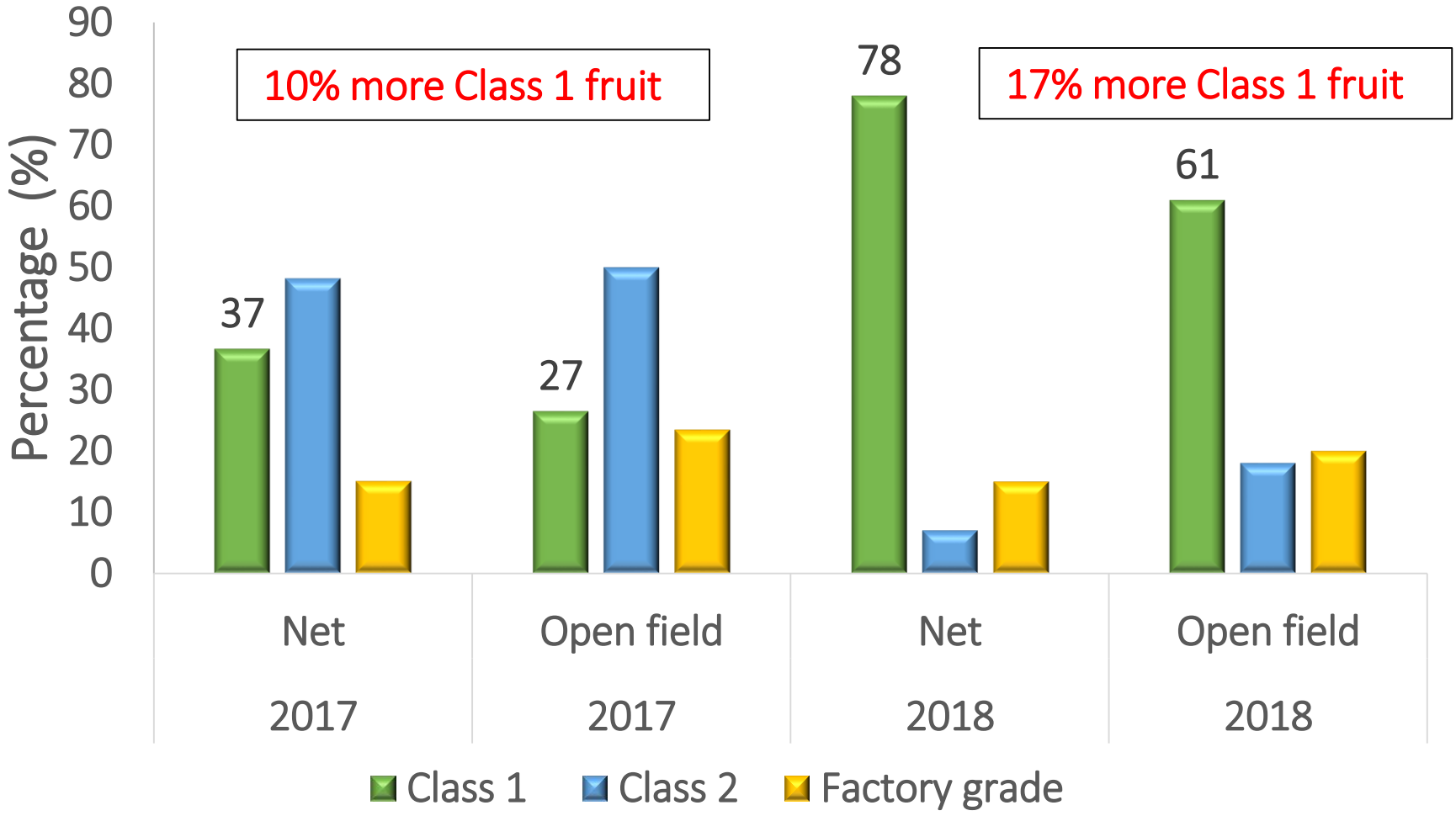
Cumulative yield:
Net – 25.0 ton
Open field: 24.7 ton
1.2% more yield shadenet



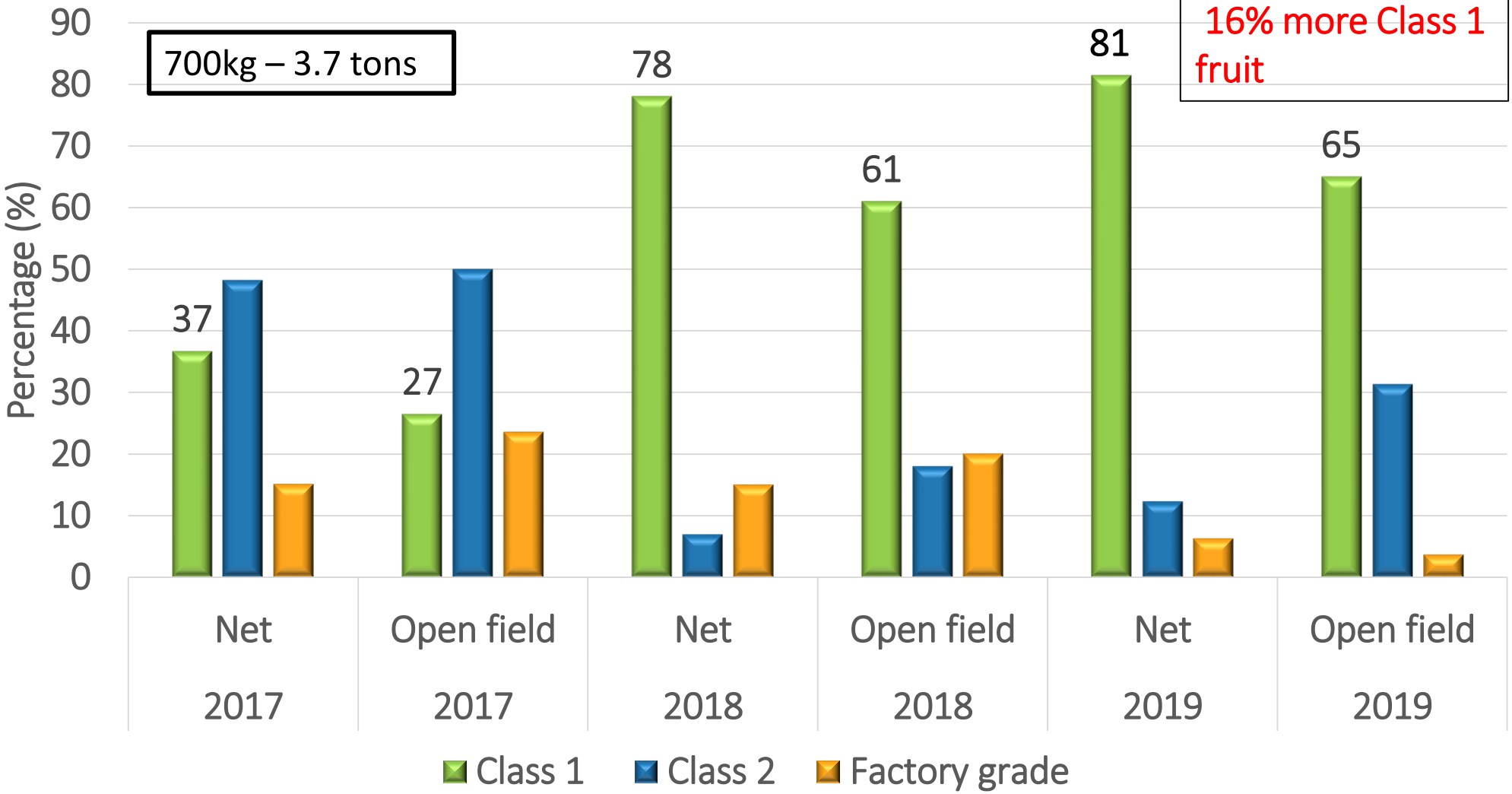
Fruit quality @ Agrivet



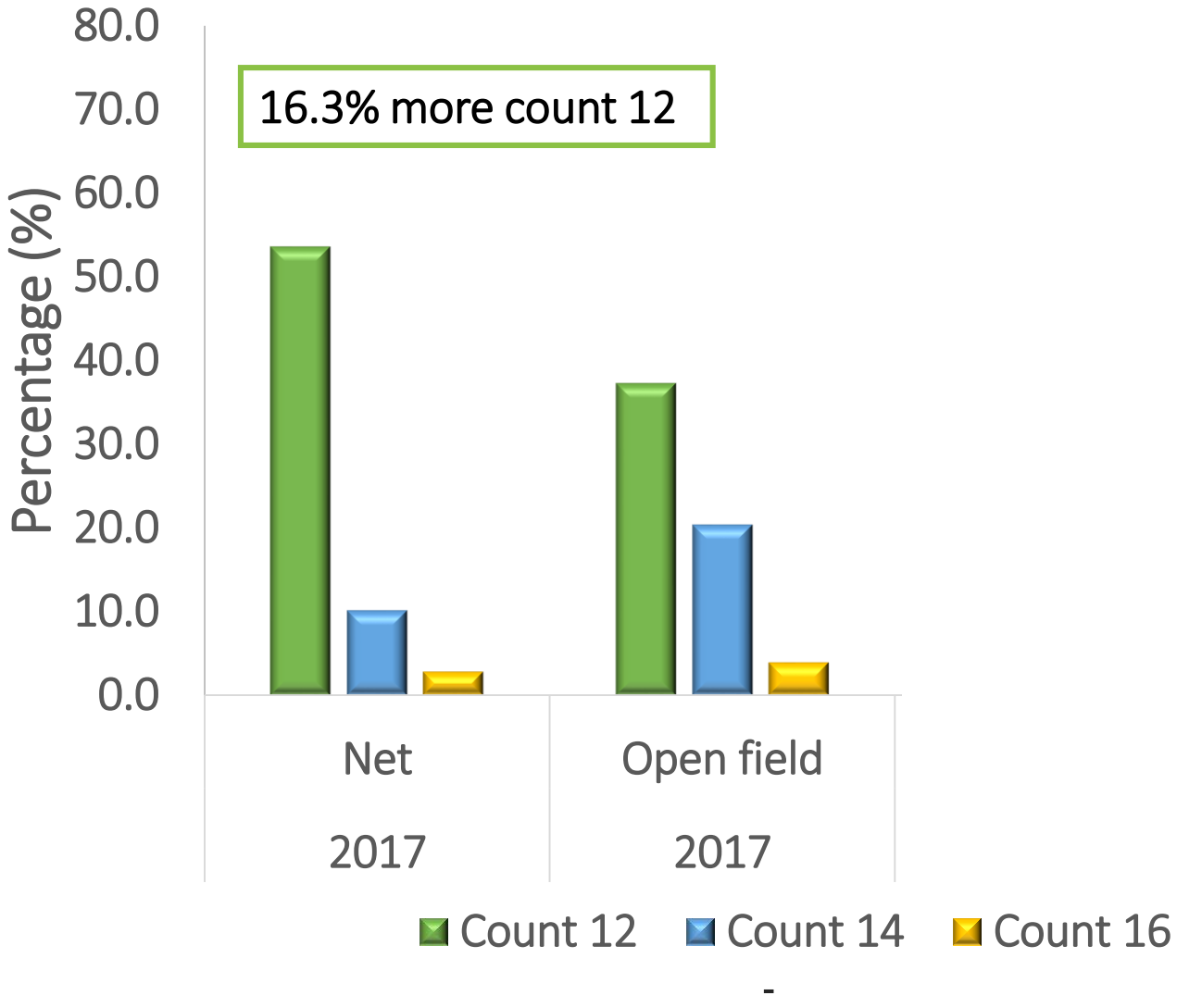
Fruit quality @ Agrivet



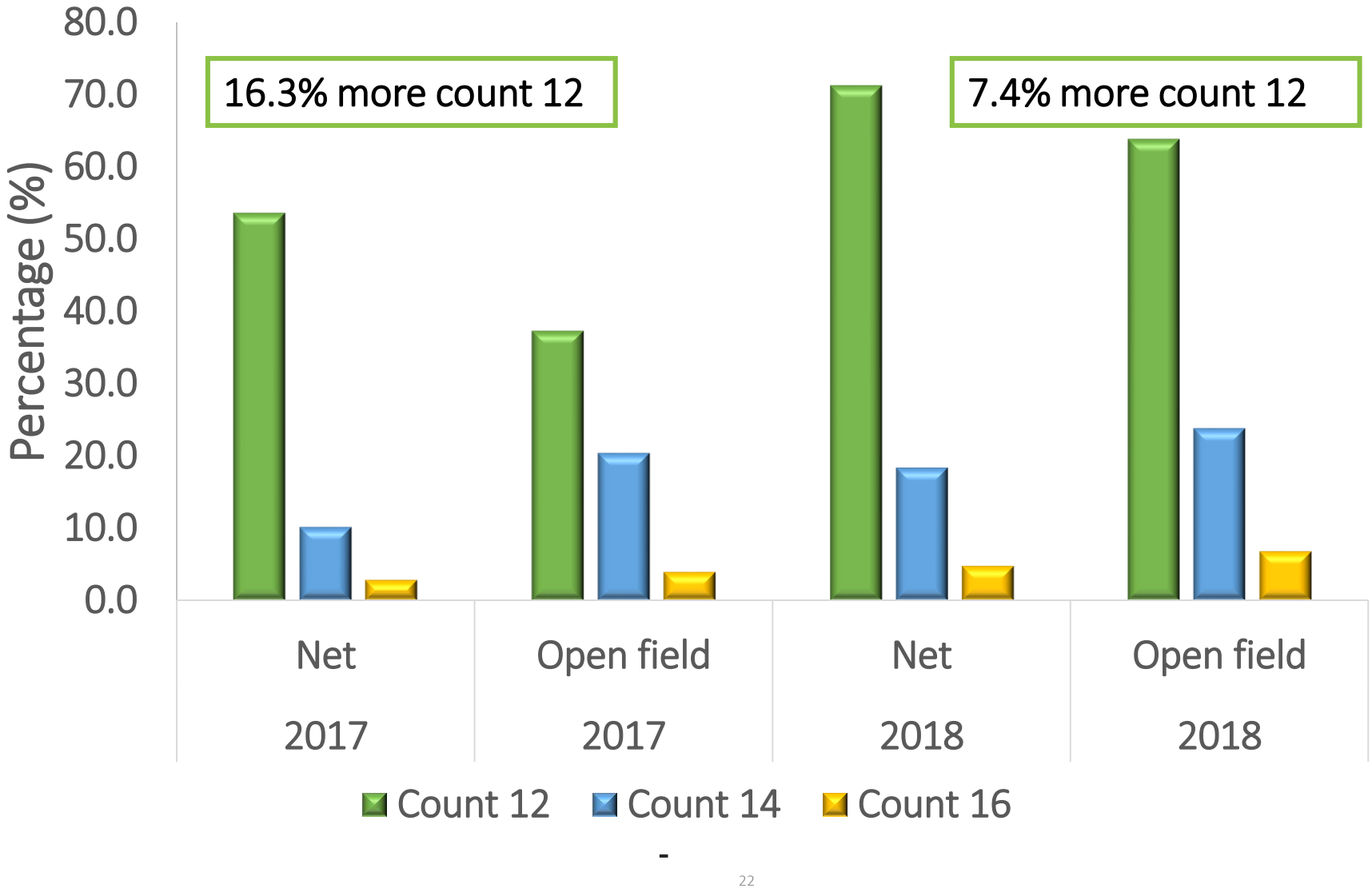
Fruit quality @ Agrivet



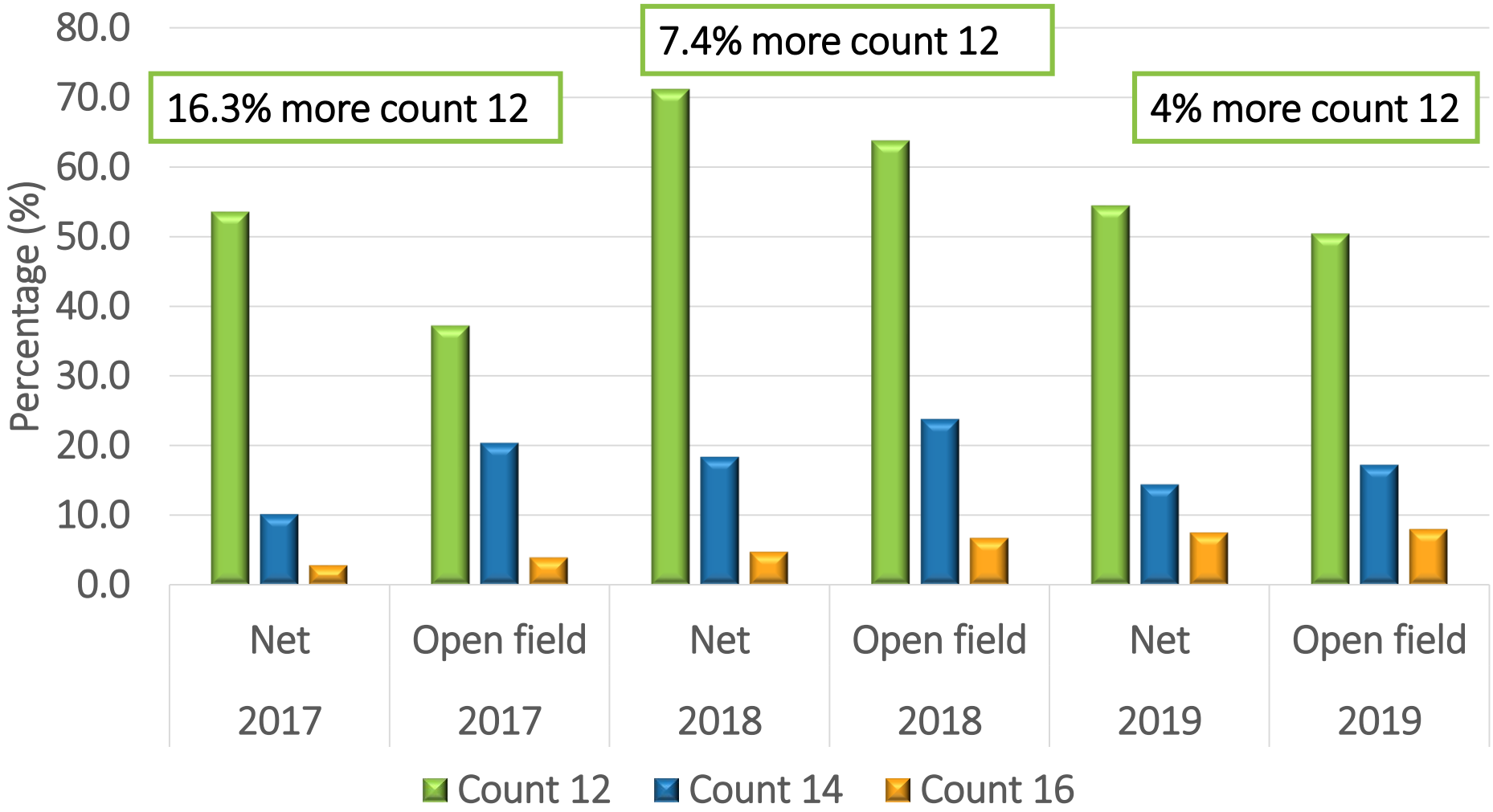
Fruit size @ Agrivet (black)



Fruit size @ Agrivet (black)



Fruit size @ Agrivet (black)



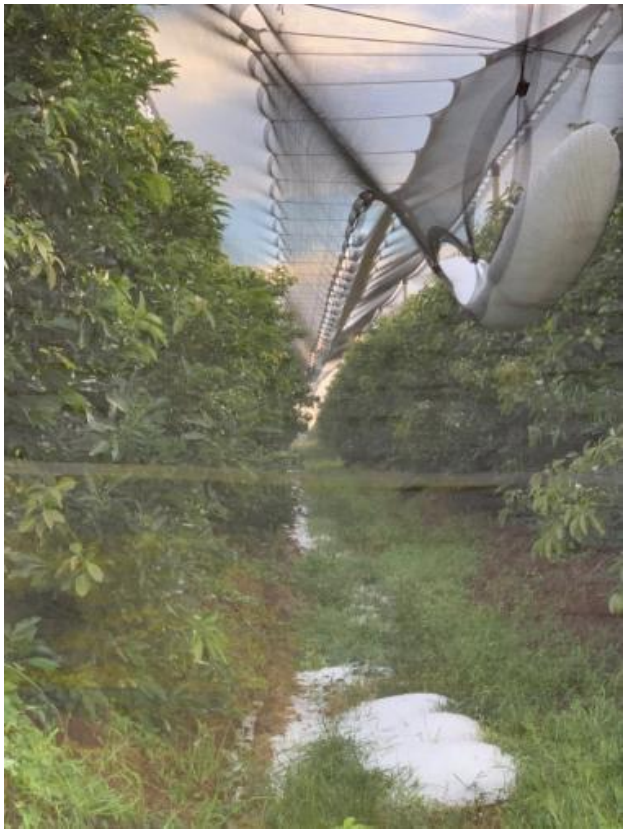
Hail @ Agrivet - 26 February 2019

54% Hail damage on fruit in open field
0% Hail damage on fruit under shadenet

Hail at Agrivet, Soekmekaar (black)

Button

Overlap



Funnel

Maintenance after the storm

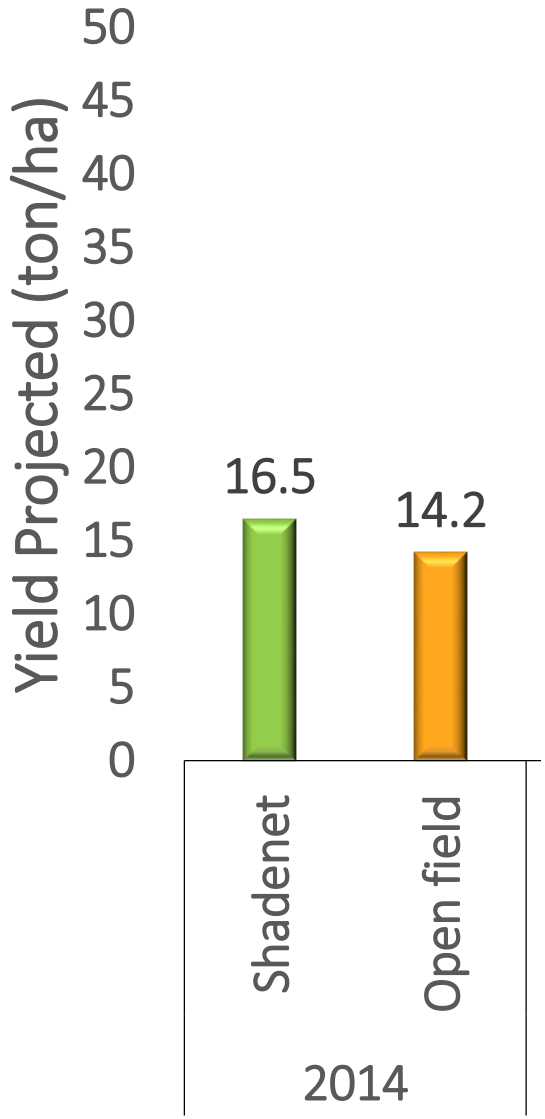
Button

Funnel

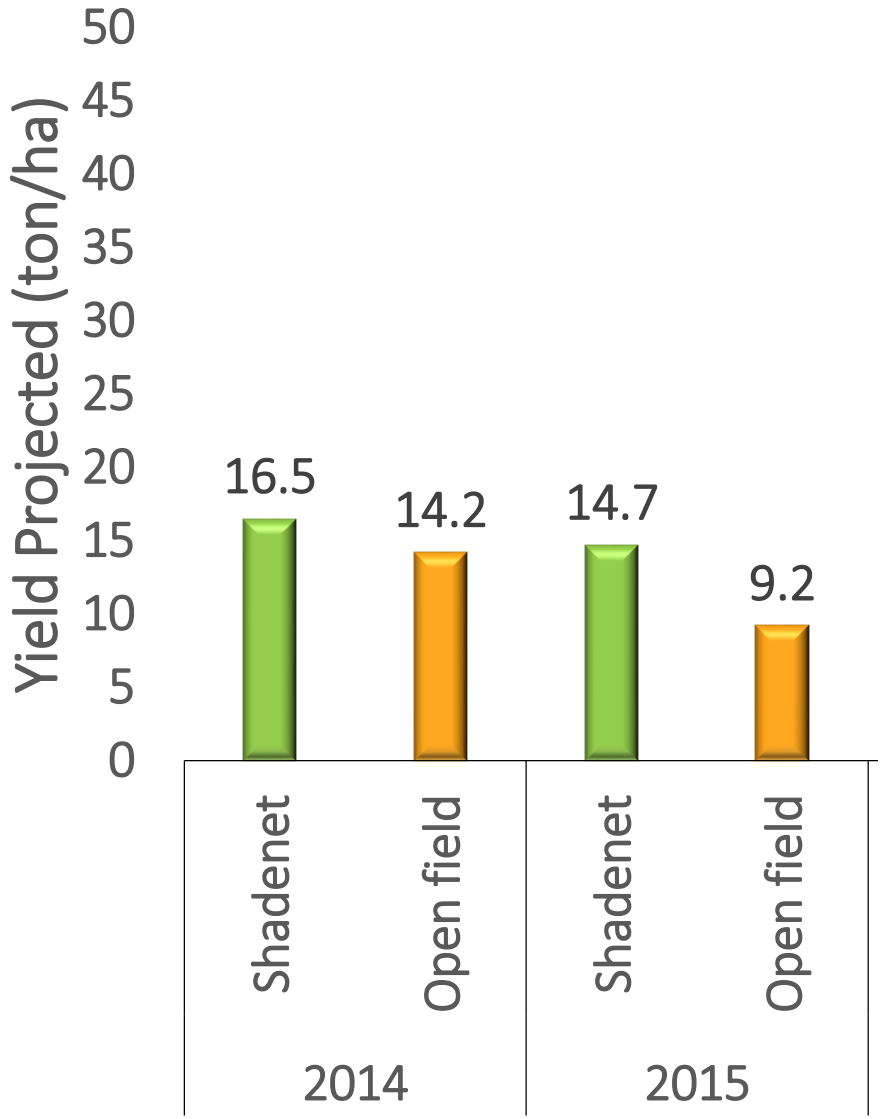
Shadenet at Everdon, Howick

Covering date:	2013/2014
Colour net:	30% Clear
Cultivar:	Gem
Spacing:	7 m x 4 m

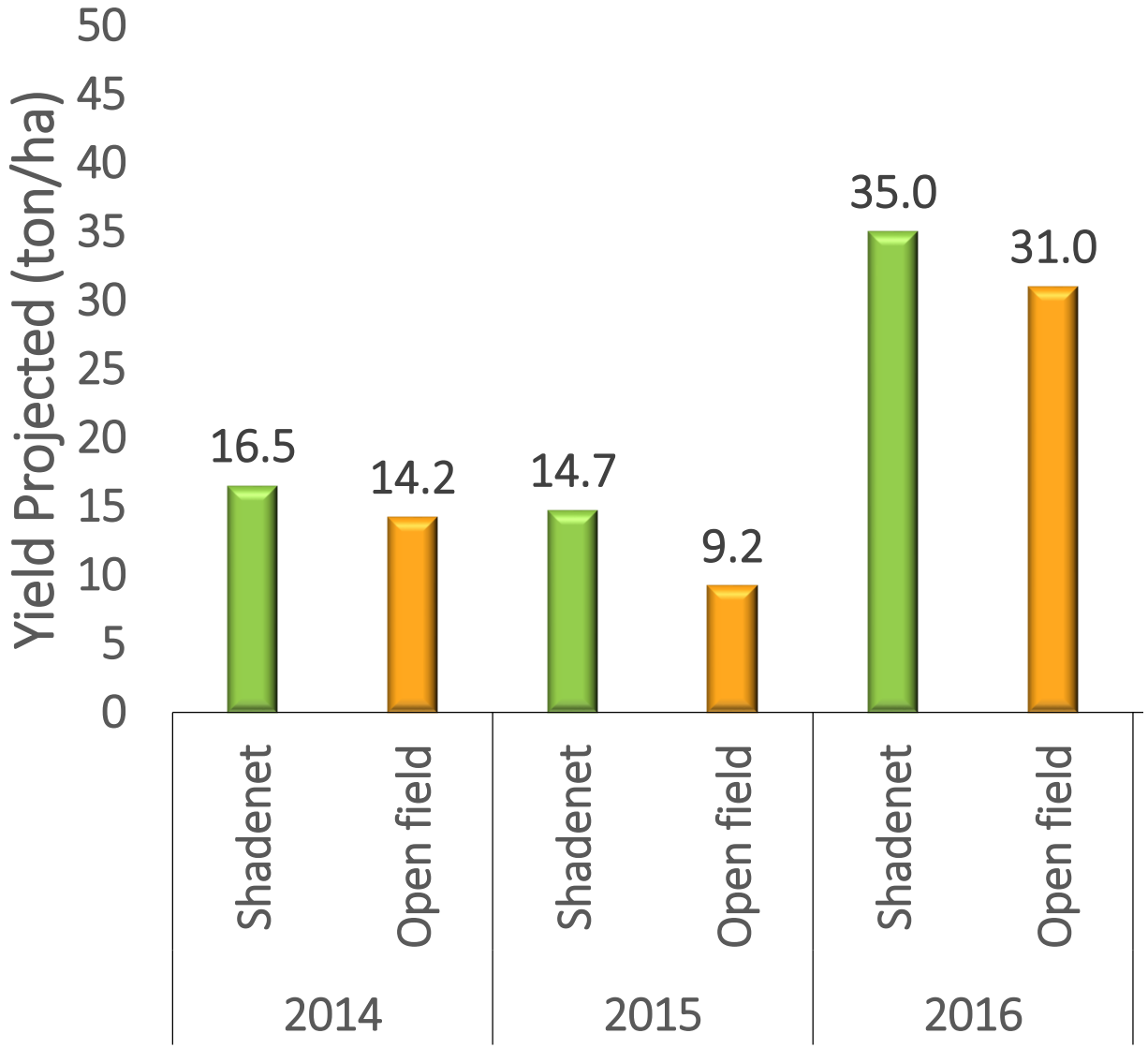
Yield@ Everdon



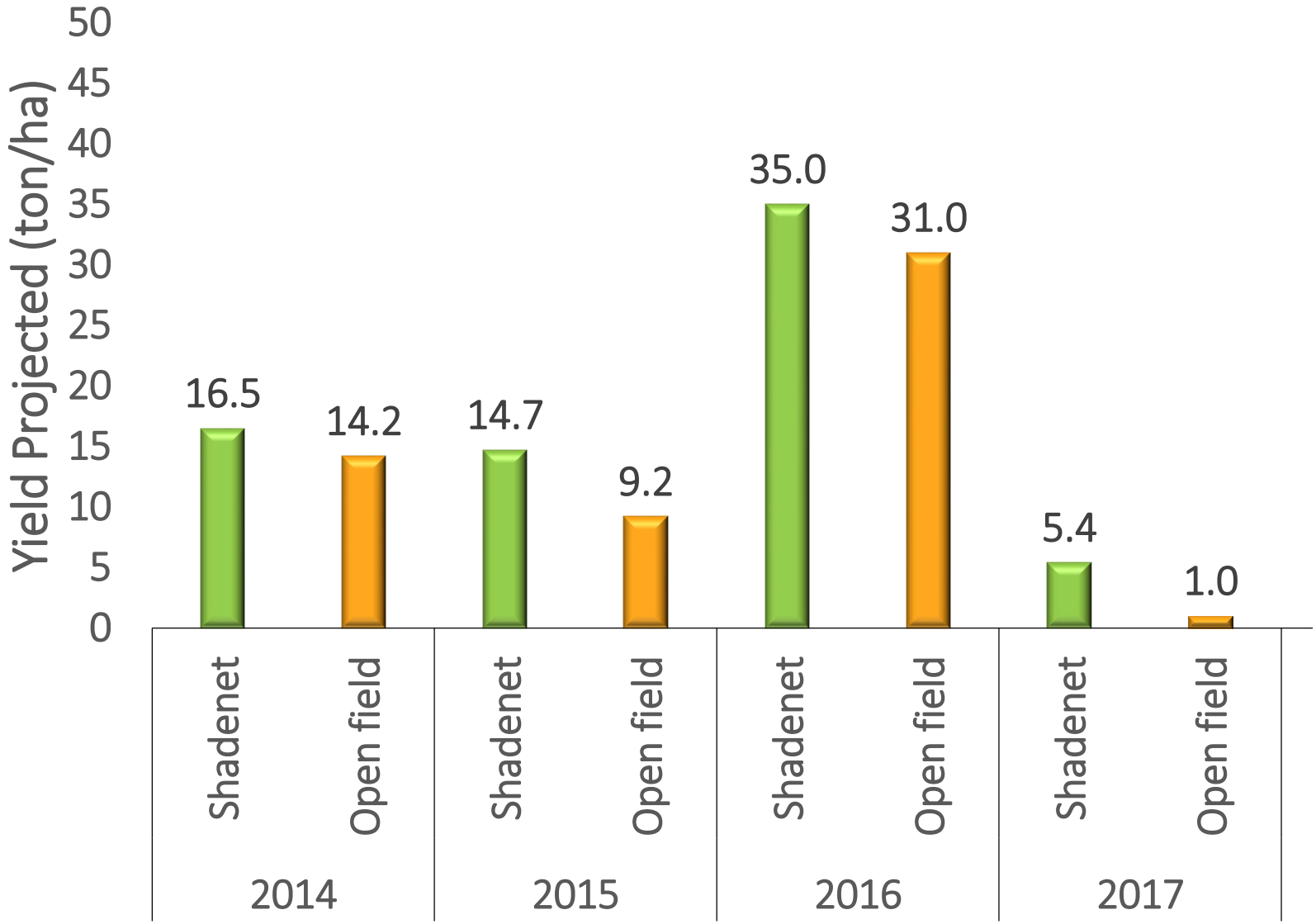
Yield@ Everdon



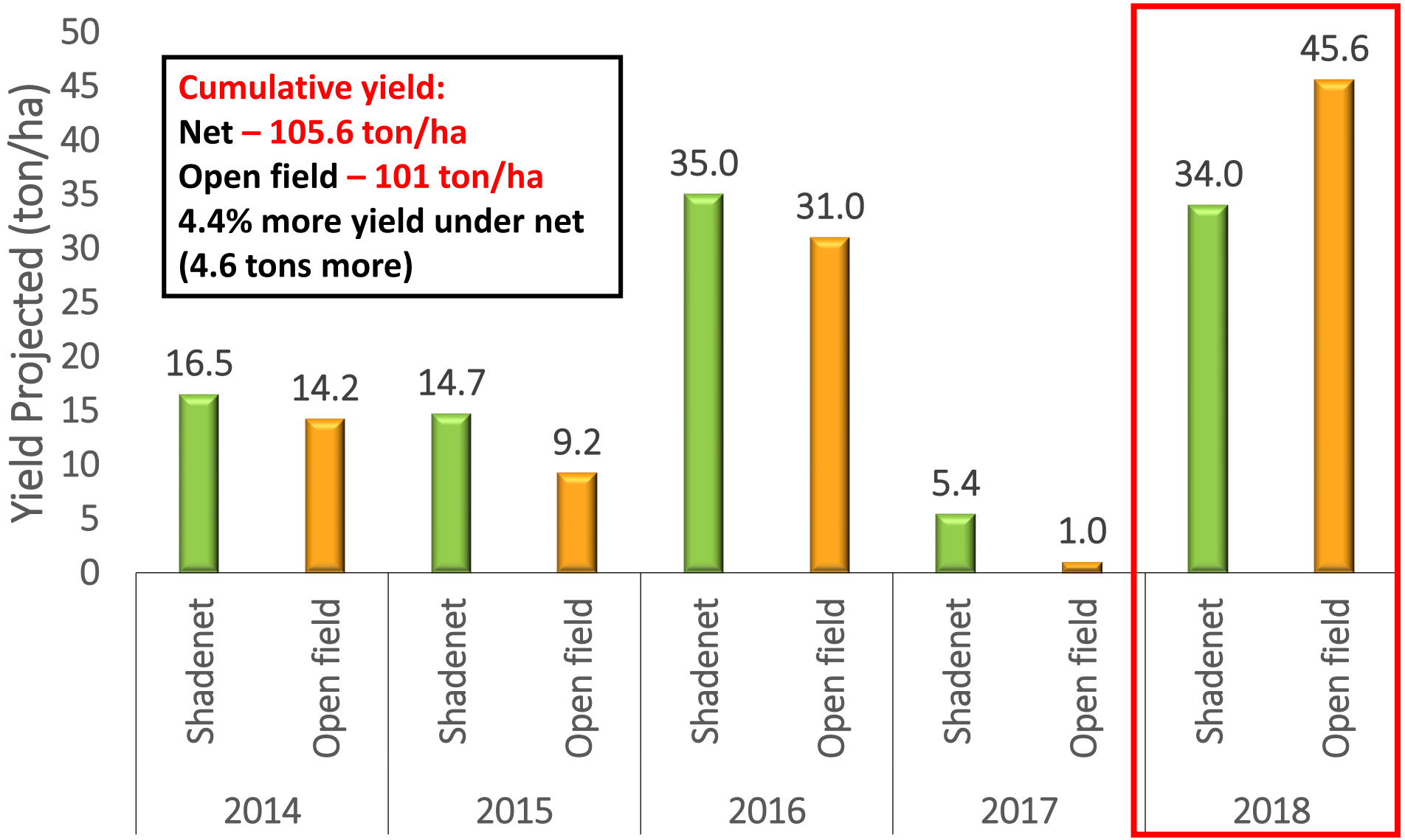
Yield@ Everdon



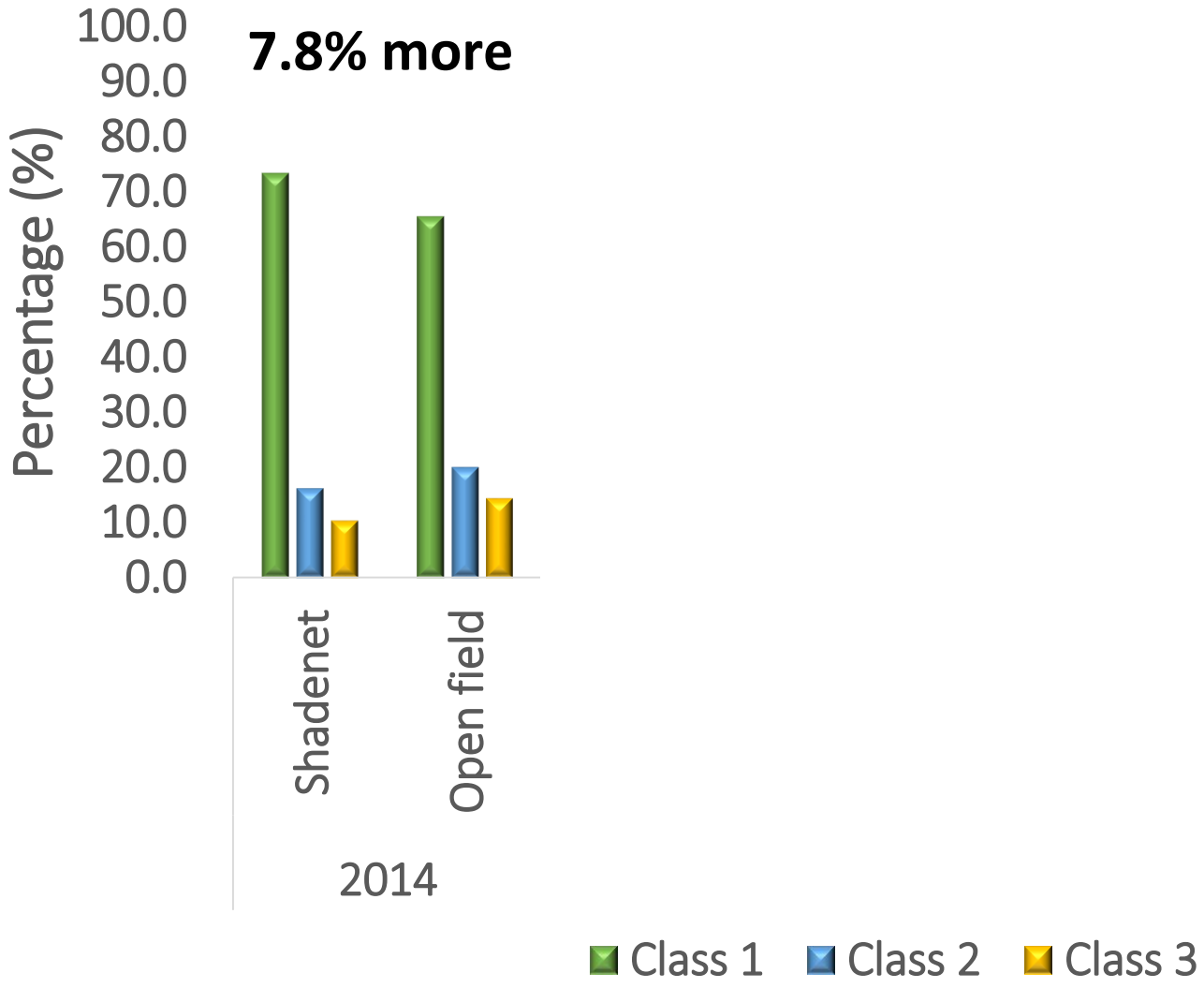
Yield@ Everdon



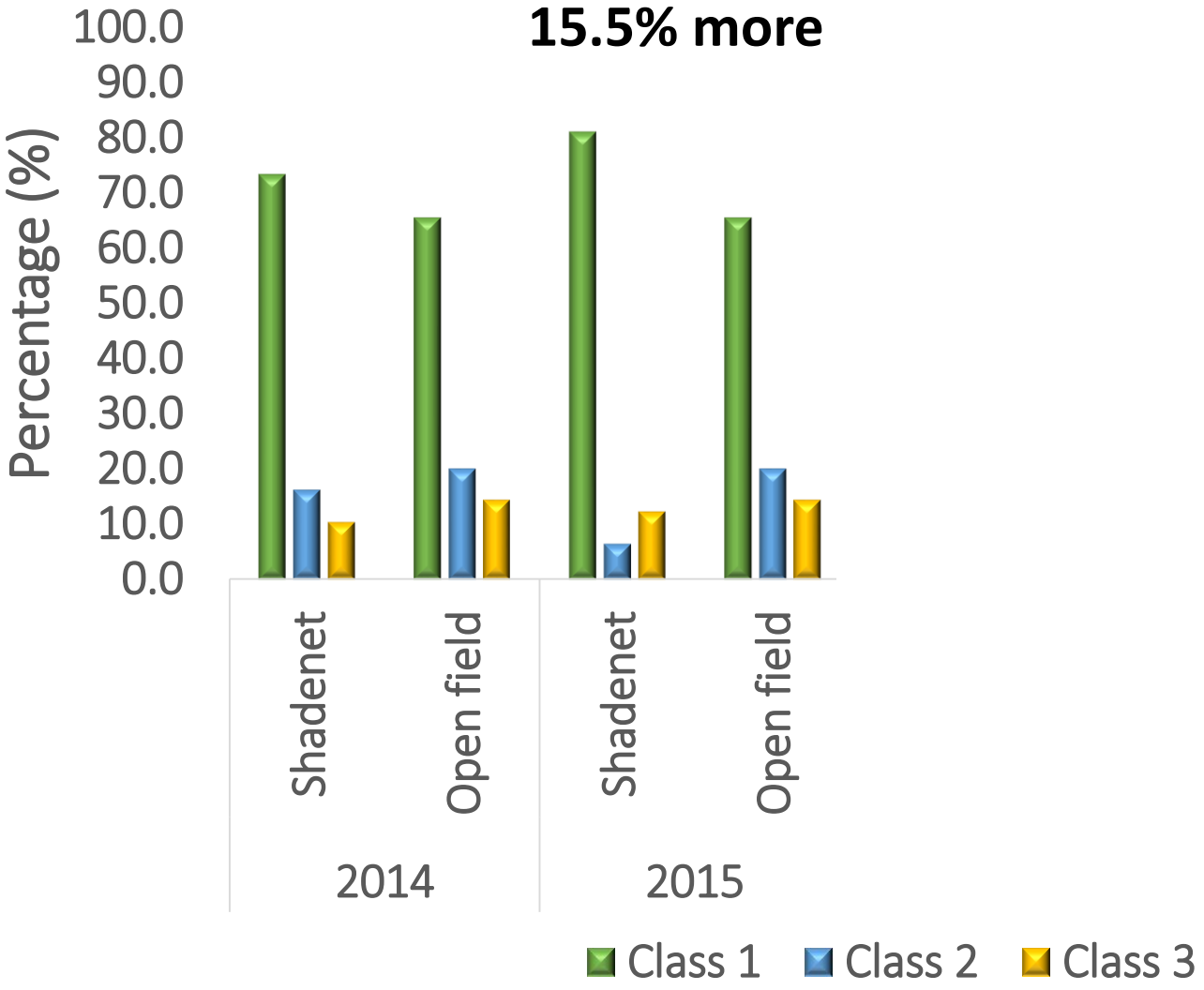
Yield@ Everdon (white shadenet)



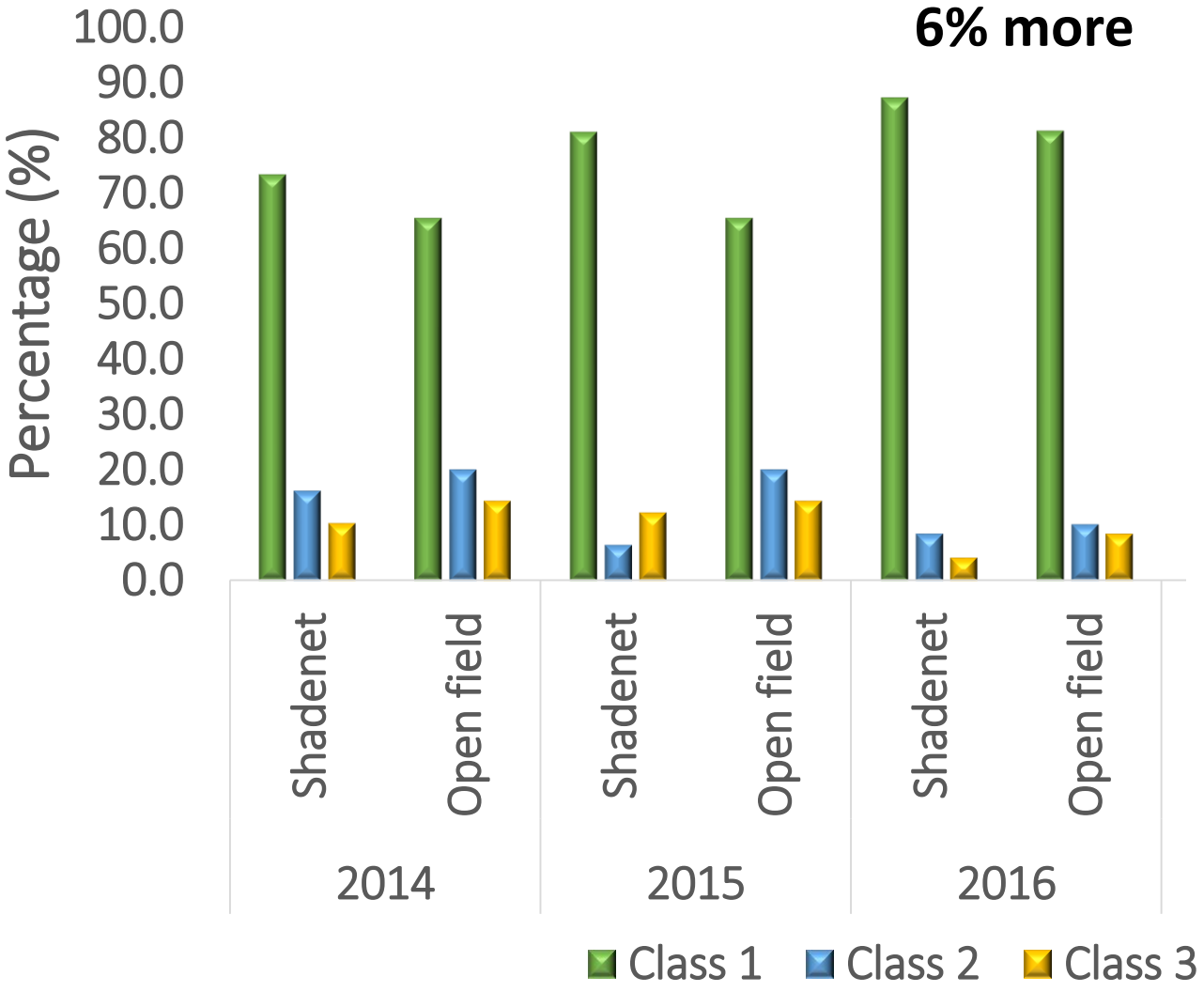
Fruit quality@ Everdon (white)



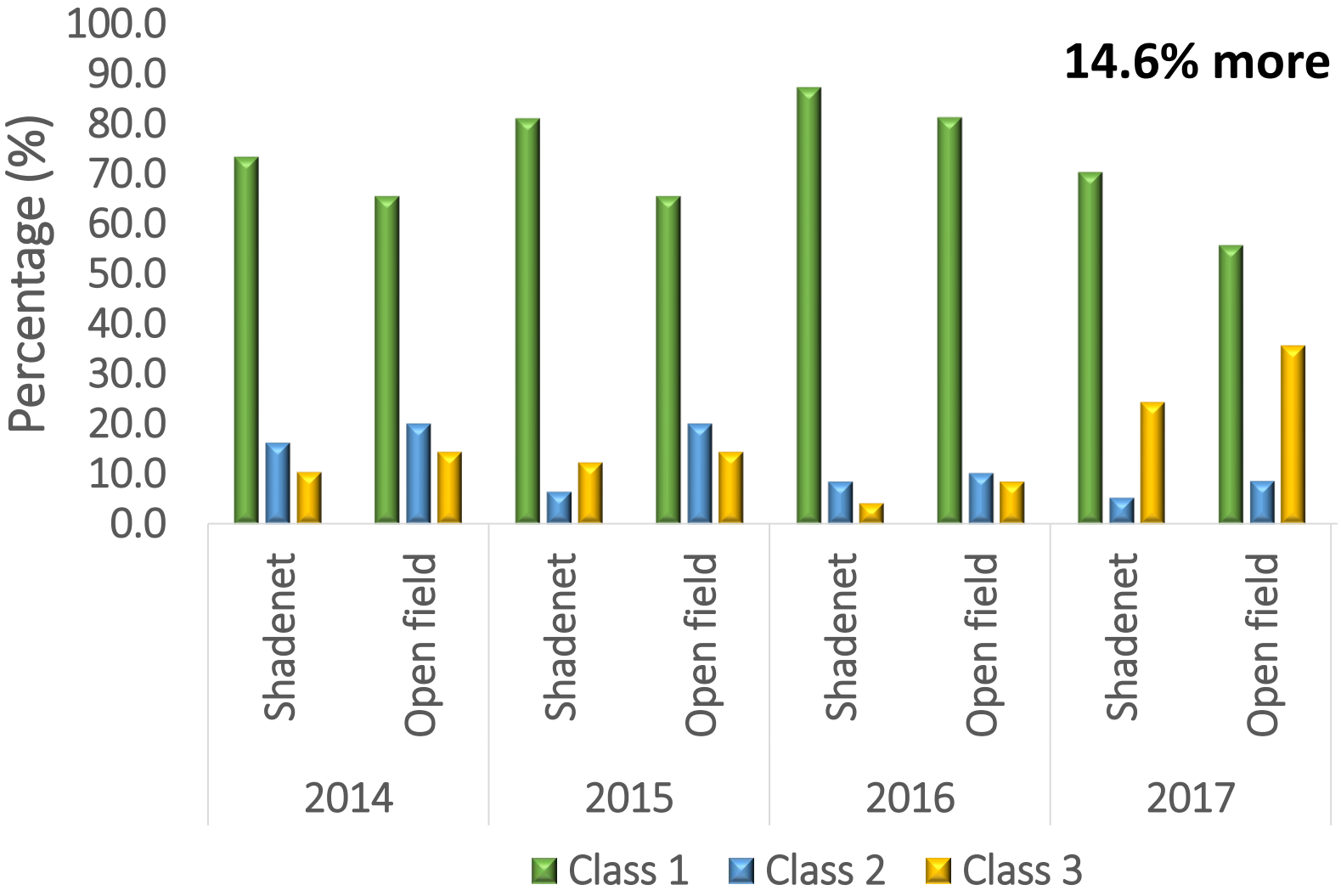
Fruit quality@ Everdon (white)



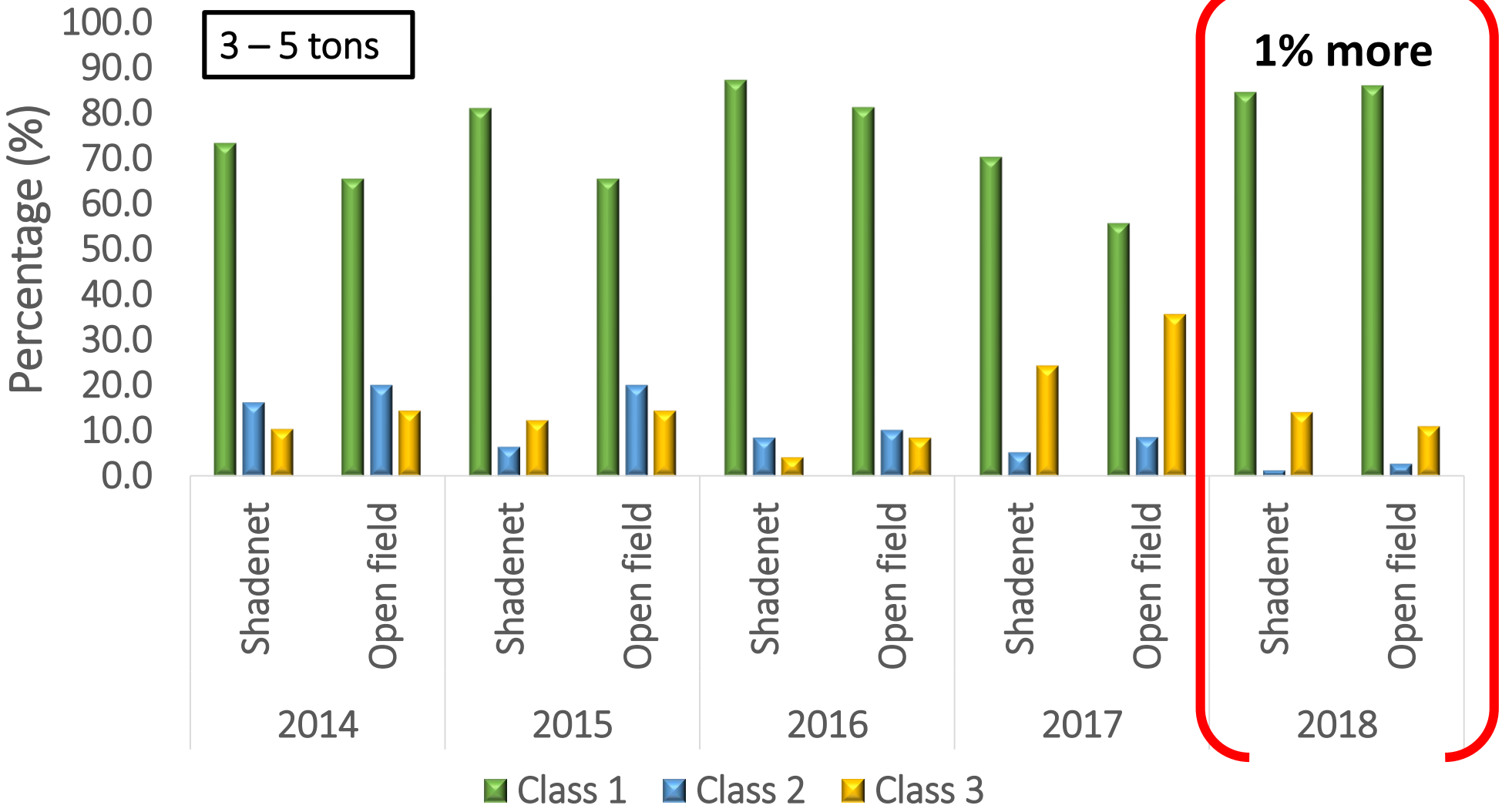
Fruit quality@ Everdon (white)



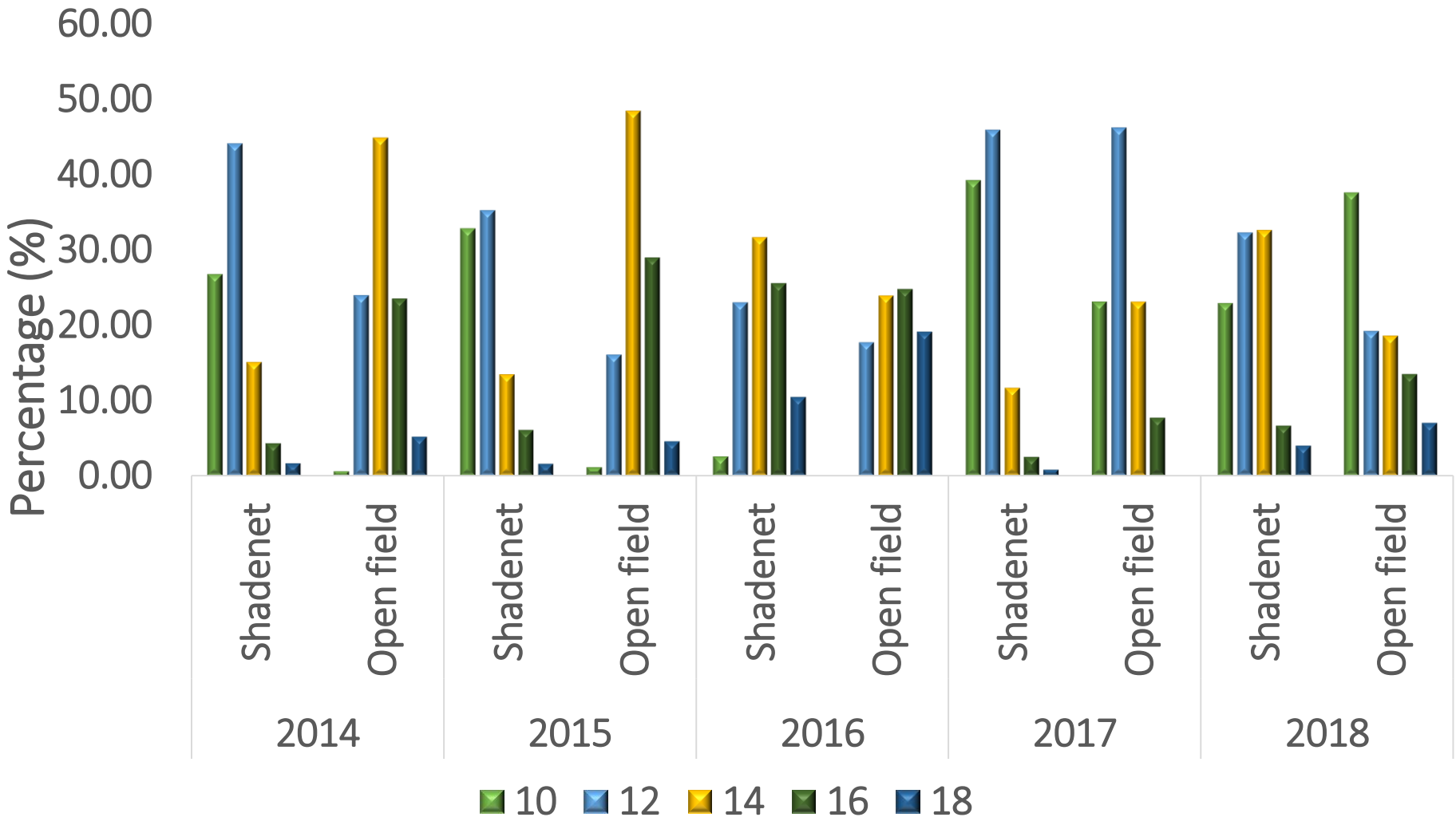
Fruit quality@ Everdon (white)



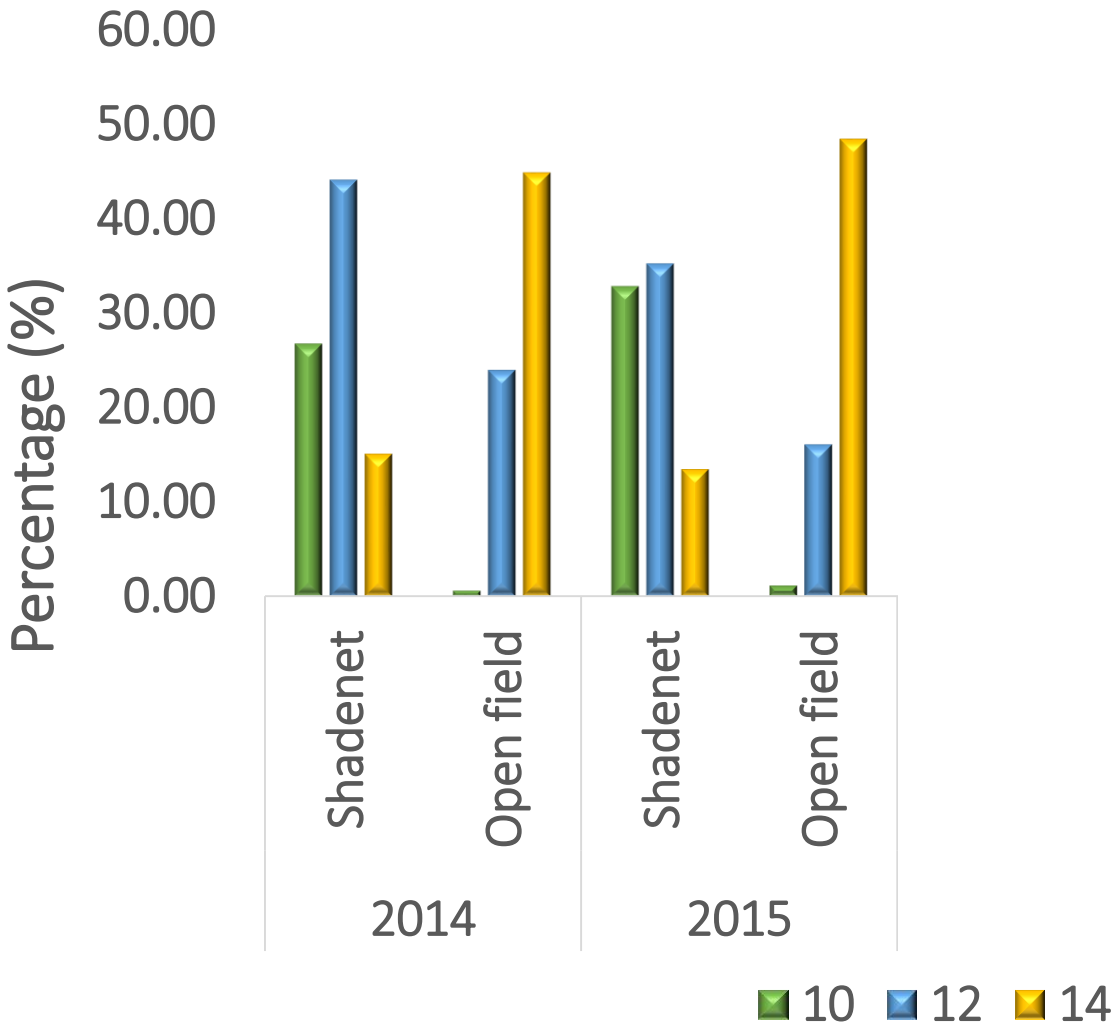
Fruit quality@ Everdon (white)



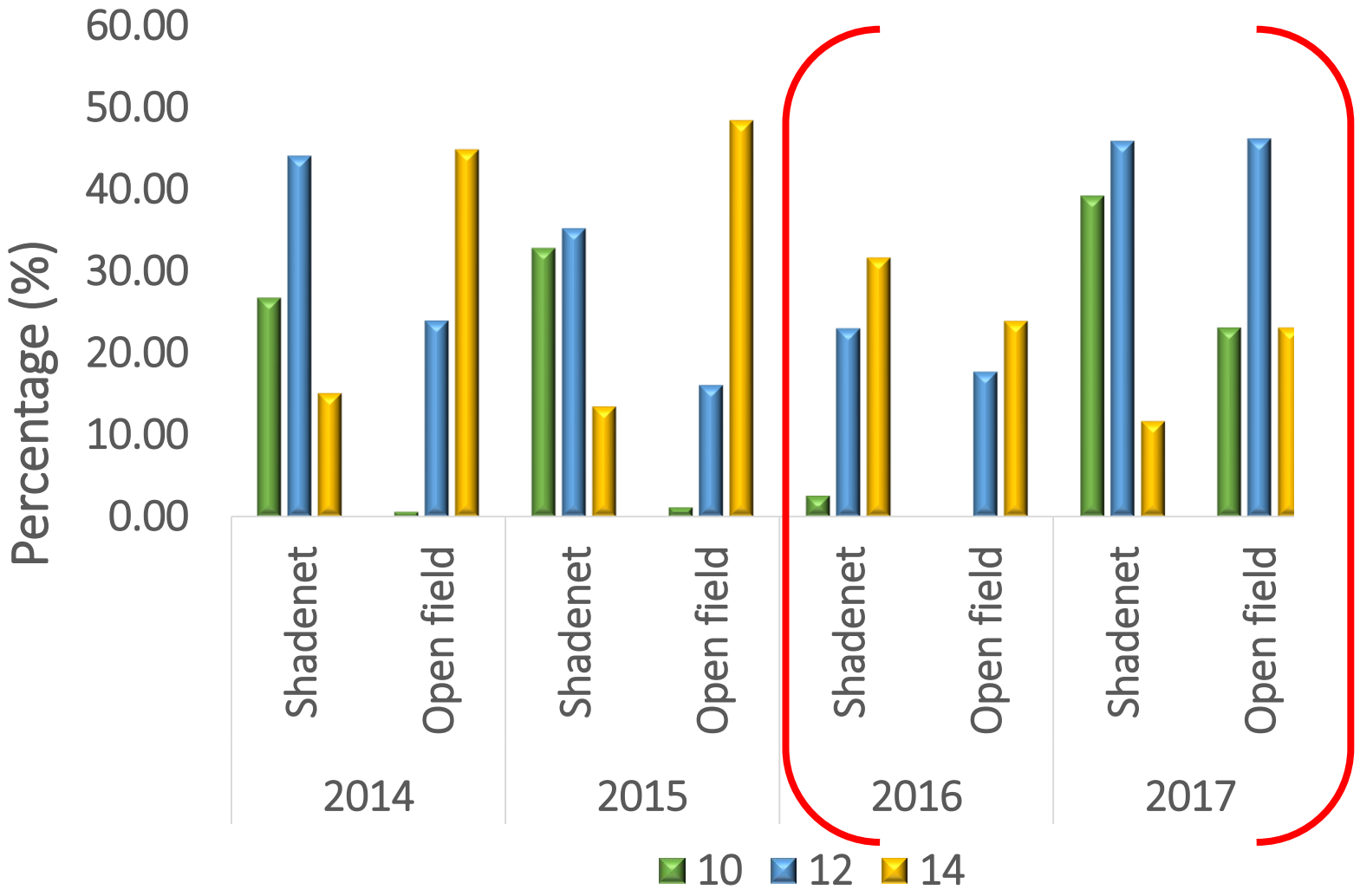
Fruit size @ Everdon (white)



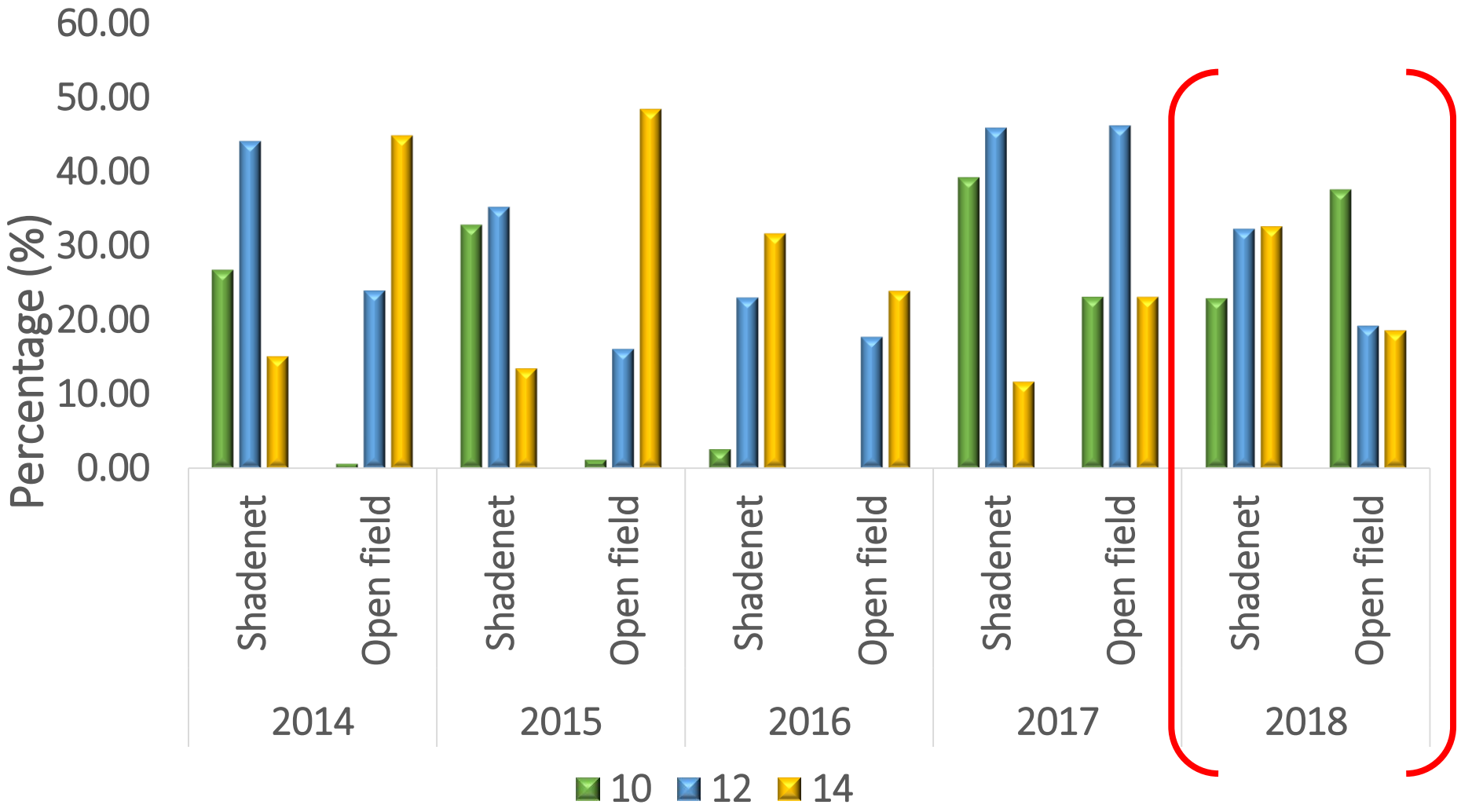
Fruit size @ Everdon (white)



Fruit size @ Everdon (white)



Fruit size @ Everdon (white)



Conclusions

- Average of 26% reduction of wind damage on fruit grown under shadenet in 3 year period at Agrivet farm (black shadenet)
- Tree growth under shadenet more vigorous vs open field
- Cummulative yield under the white shadenet @ Everdon was 4.4% (4.6 tons) more vs open field
- Shadenet orchard produced 10%+ more Class 1 fruit vs open field orchard
- Shadenet tends to produce larger fruit
- Pruning management more important under shadenet (bee movement, light into tree canopy for flowering and fruit set)

General Conclusions

- Costs of shadenets are expensive
- Benefits are better fruit quality (more Class 1 fruit), potential higher yield and hail protection
- Marketing window of your farm and cultivar selection very important factors to justify financial output

Acknowledgements

- The Soekmekaar (Manie Eloff) and the Everdon Fruit Estate teams (Cecil Hackney & Bongkeka Ndlovo).
- Research assistants Patric Malatji, Aubery Rasakanji and Tumelo Lehlaleroa.
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Thank you

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