

# The influence of different pruning systems on the beginning of domestic plum production and yield



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**LatHort**



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“Challenges of Plum Growing in Europe”



# *Materials and Methods*

The trial was **planted in 2012** at Institute of Horticulture in Dobeles.





Planting distances were  $4 \times 2.5$  m, rootstock — *Prunus cerasifera*.

Cultivars 'Ance', 'Adelyn', 'Sonora', as control were used 'Victoria' and 'Jubileum'.



Ance

Adelyn

Sonora

Jubileum

Victoria



**Heka espalier**

**Spindle system**

**Standard (round)  
Crown**

**Flat crown**

With  
bending and  
pruning

Only with  
pruning





**The actuality** of this research is to get the harvest as soon as possible together with fruit quality.

**The aim** of the research was to identify the most effective pruning system for new Latvian cultivars, who gave the highest yield and showed the best fruit quality.

**Evaluation was done of:**

- the first yield;
- the average yield from 2015 to 2017;
- the yield per trunk cross section area;
- the average fruit weight.



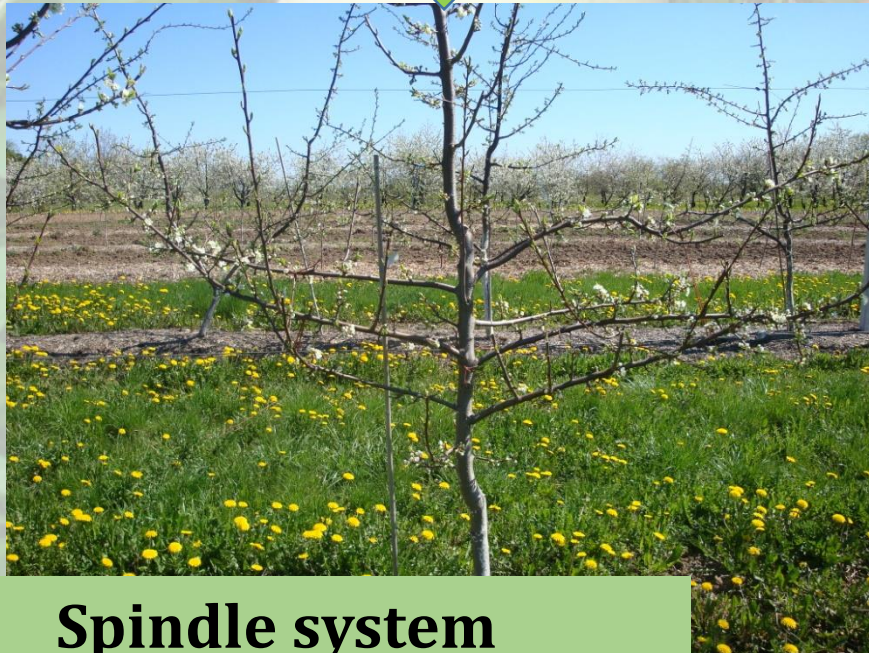


Crown with support system makes fruit twigs abundant already at an early age of the tree – it is mean 2<sup>nd</sup> or 3<sup>rd</sup> year.

Early yield stoped fast growing of trees

**If we compared these crown systems:**

- one axe for harvesting;
- more pruning needed;
- stem more exposed to sun.



**Spindle system**

- two axis for harvesting;
- less pruning needed;
- the trunk is better protected from the sun.



**Heka espalier**



Formed crown without bending, but only with pruning:

- tree habitus is more stronger, more steeper;
- fruit twigs is forming later;
- labor consumption is much higher (a lot of pruning);
- first yield 1-2 years later (depending on cultivars).



systems without bending –  
standard (round) and flat crown

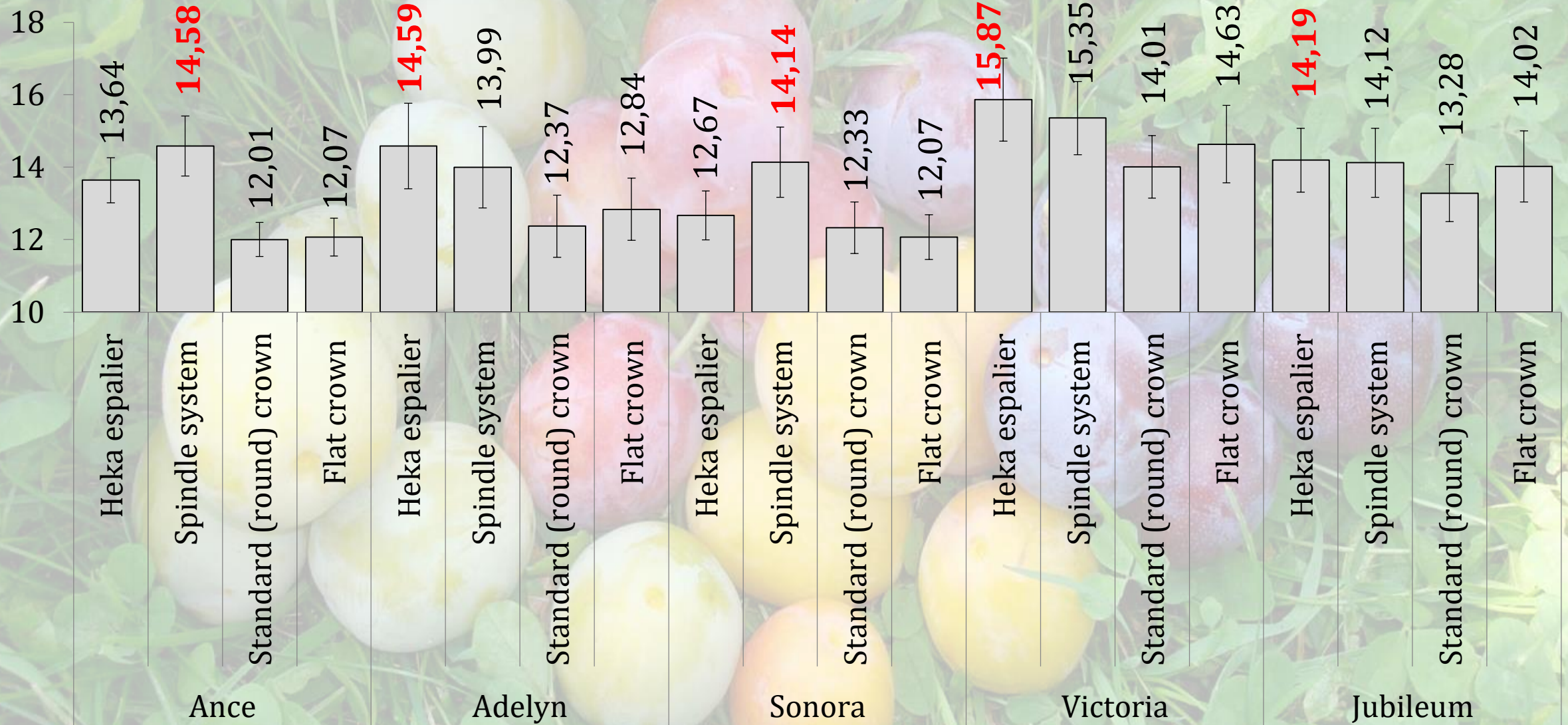


## Average yield per tree, kg

p-value:

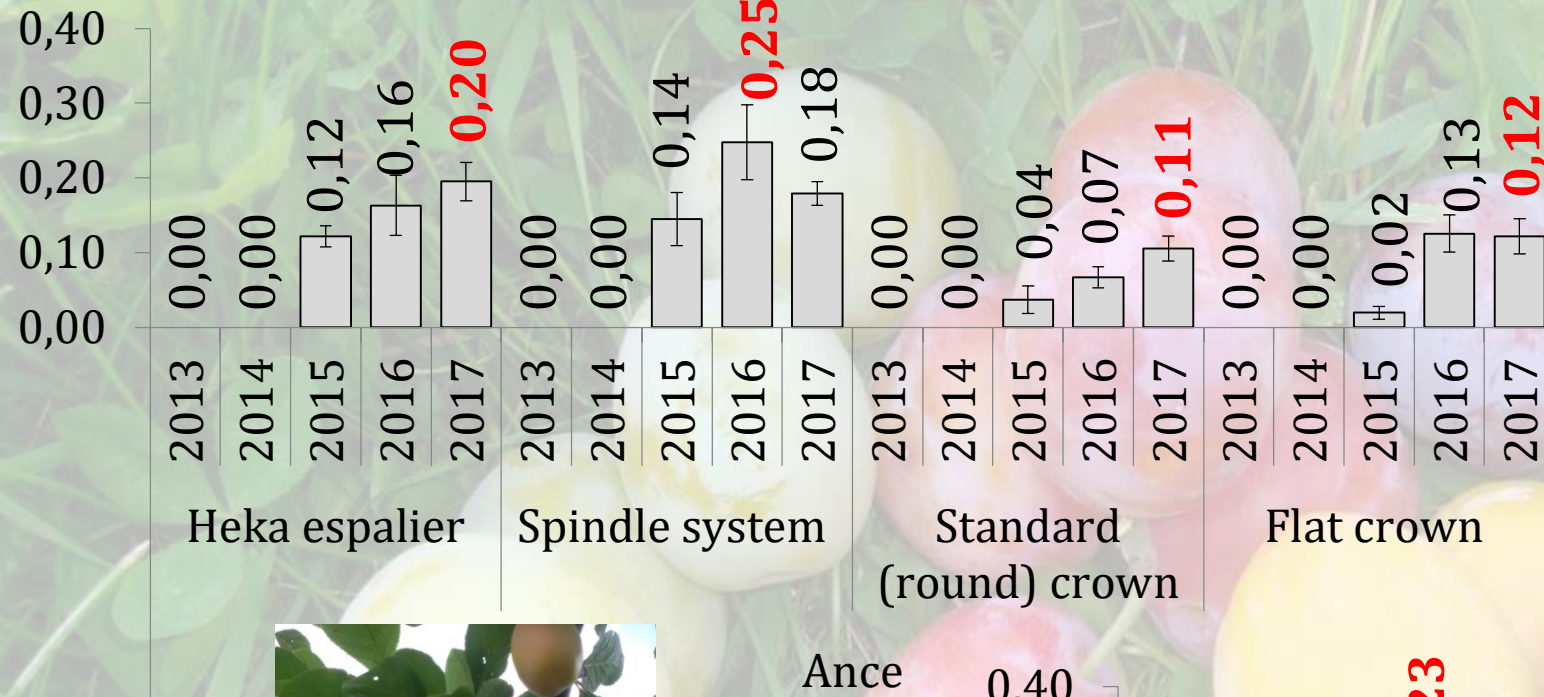
among cultivars >0.05

among pruning systems >0.05

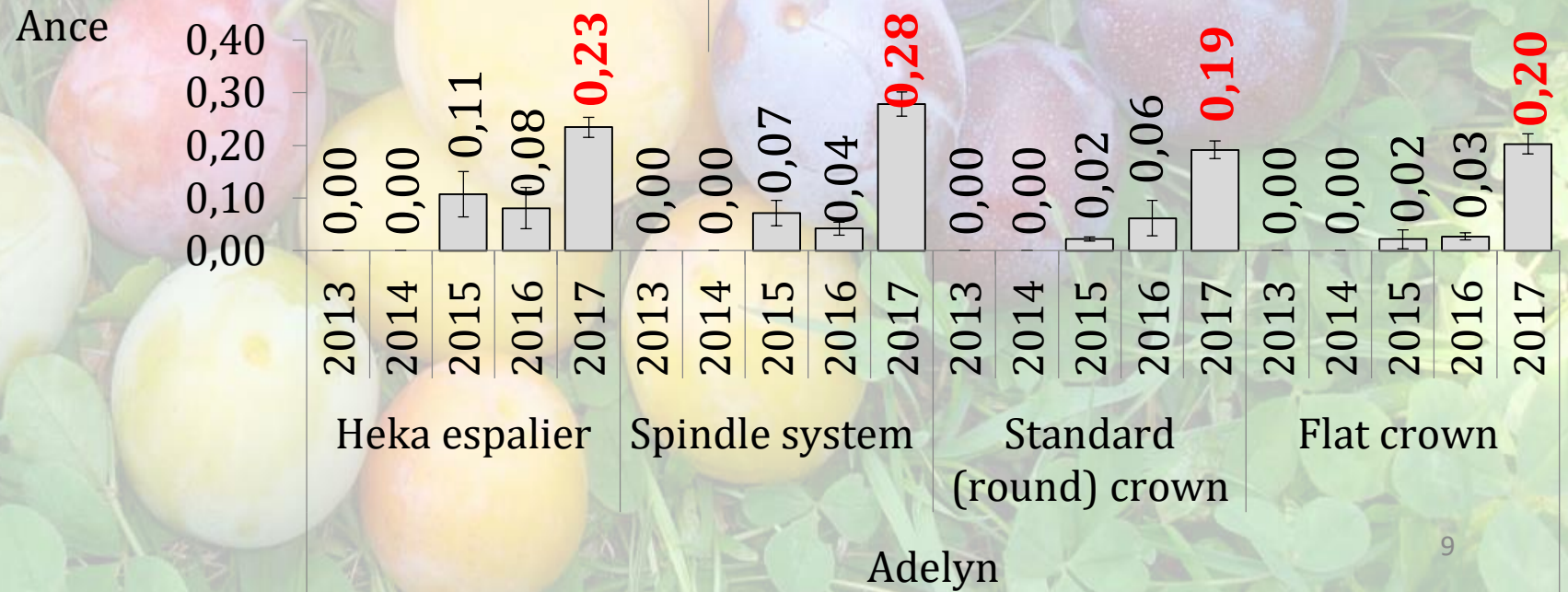




# Yield per trunk cross section area, g/cm<sup>2</sup>

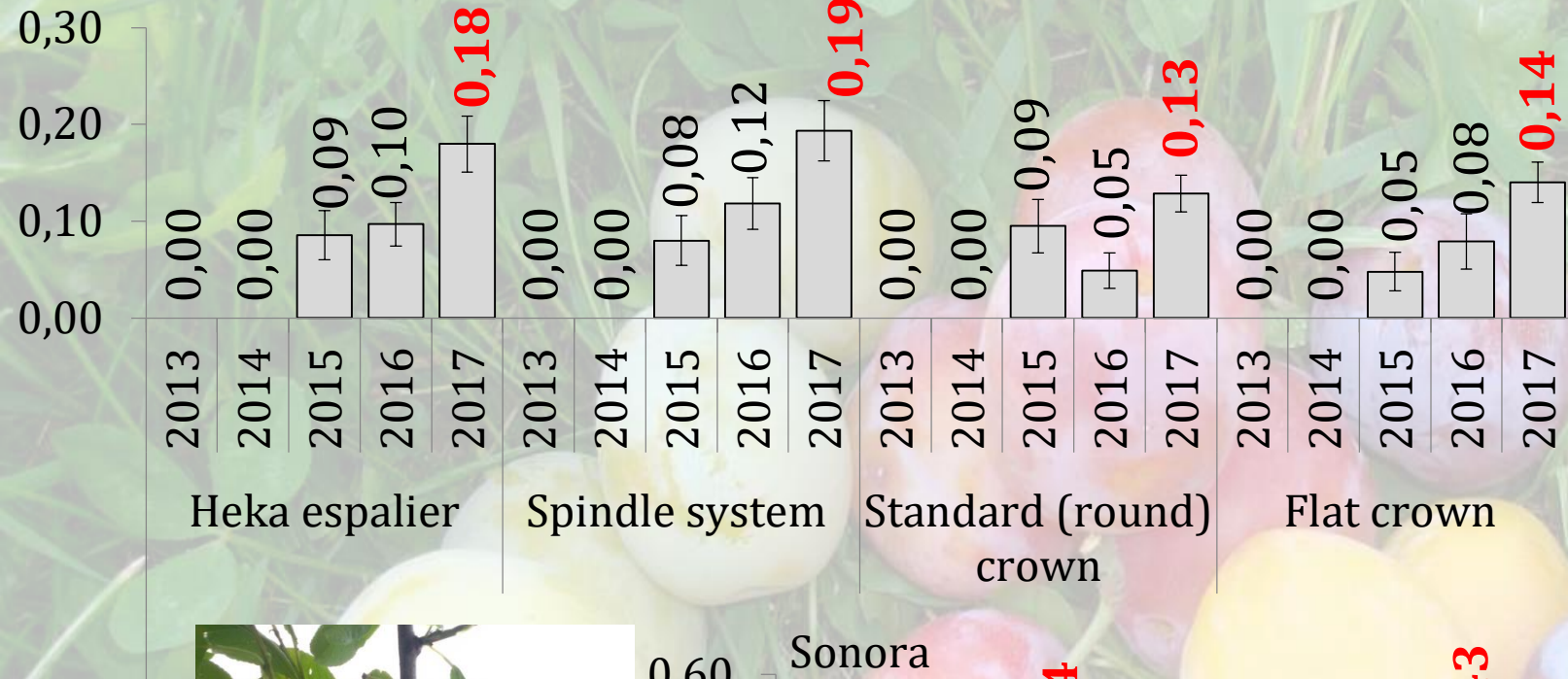


**p-value:**  
among years <0.05  
among pruning systems <0.05

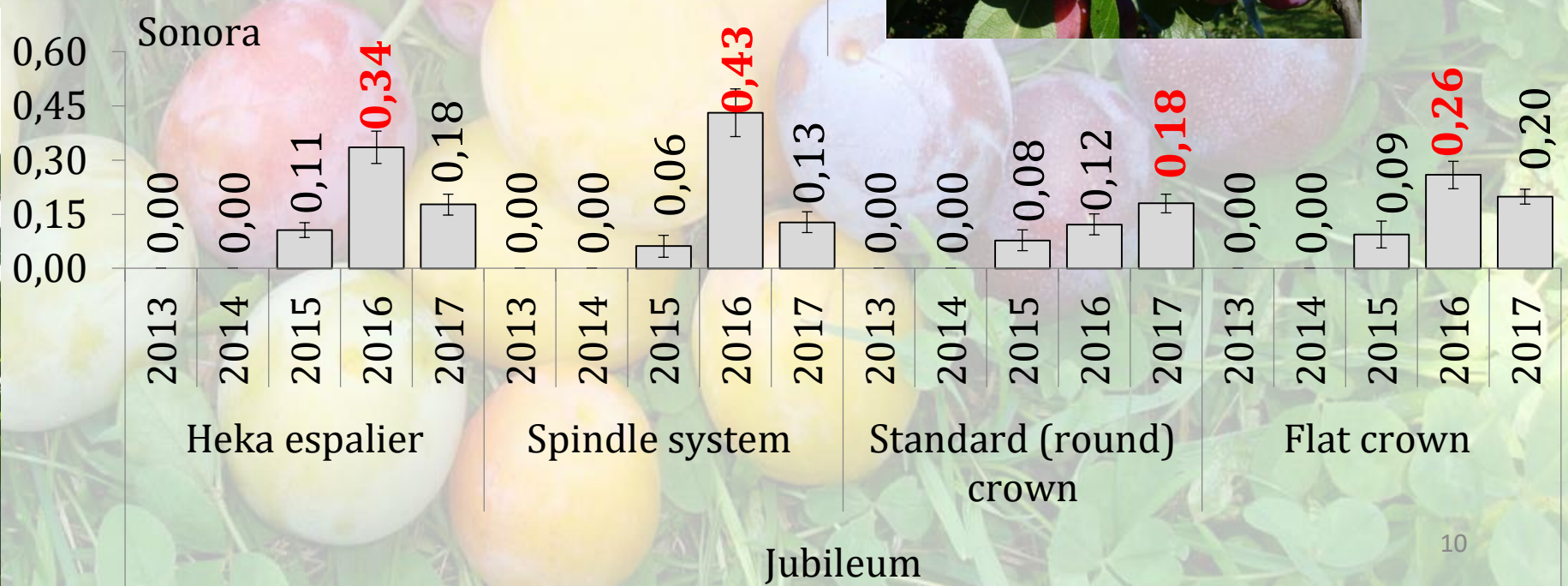




# Yield per trunk cross section area, g/cm<sup>2</sup>



**p-value:**  
among years <0.05  
among pruning systems <0.05



Jubileum

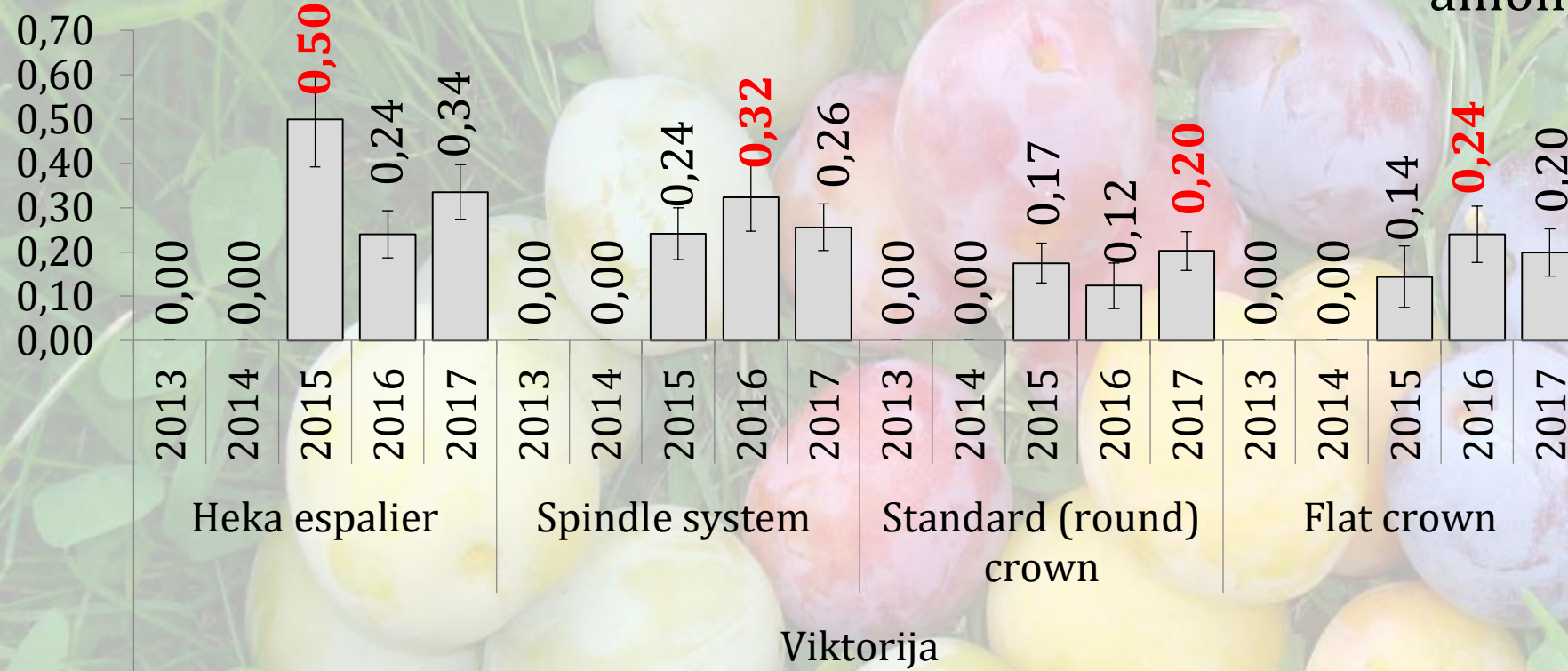


# Yield per trunk cross section area, g/cm<sup>2</sup>

**p-value:**

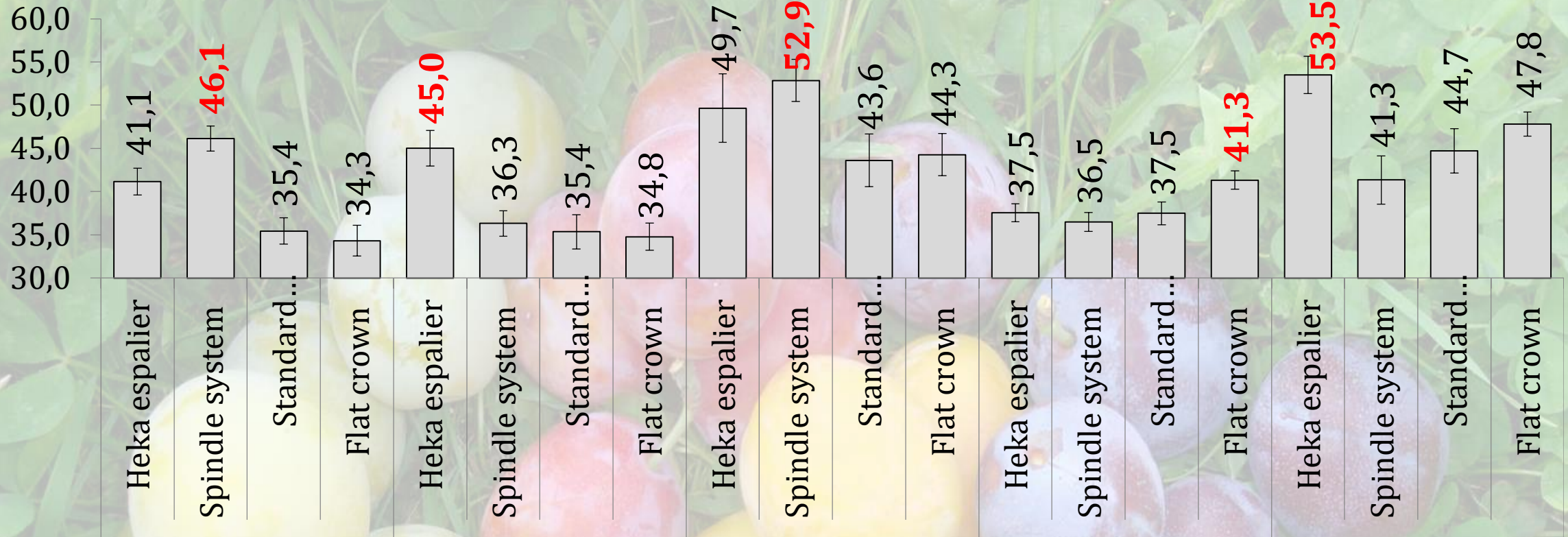
among years >0.05

among pruning systems <0.05





## Average fruit weight, g



p-value:

among cultivars >0.05

among pruning systems (except 'Sonora') <0.05





## *Conclusions*

1. To work with trees in support systems is much easier and more interesting (☺).
2. First yield in support systems was in 2015 (first fruits in 2014), in pruning systems first yield was in 2016 (first fruits in 2015).
3. Highest average yield, but without significant differences, had cultivar 'Victoria' if we look at all cultivars together. If evaluate each cultivar, significantly higher average yield in crowns of support systems was for cultivars 'Ance', 'Adelyn' and 'Sonora'.
4. Yield per TCSA was significantly higher in support system for cvs. 'Ance', 'Adelyn', 'Jubileum' and 'Victoria'.
5. Average fruit weight had no significant statistical differences if we look at all cultivars together. If evaluate each cultivar, best fruit quality was for 'Ance' and 'Sonora' in spindle system, for 'Adelyn' and 'Jubileum' in Heka espalier, for 'Victoria' in flat crown.





***Thank you for your attention!***