

Small volume : Spanish bush, KGB, drilling

Sara Pinczon du Sel, La Tapy
G rard Charlot, Ctifl



SPANISH BUSH

No trial in France at present.



SPANISH BUSH

- **What is it?**

- Production of numerous branches in order to reduce vigor.
- The number of vertical leaders should be proportional to tree vigor.

- **Why to choose it ?**

- Semi-pedestrian orchard.
- Fast and easy to harvest.



SPANISH BUSH

- **Recommended rootstocks**

Vigorous or semi-vigorous rootstocks.

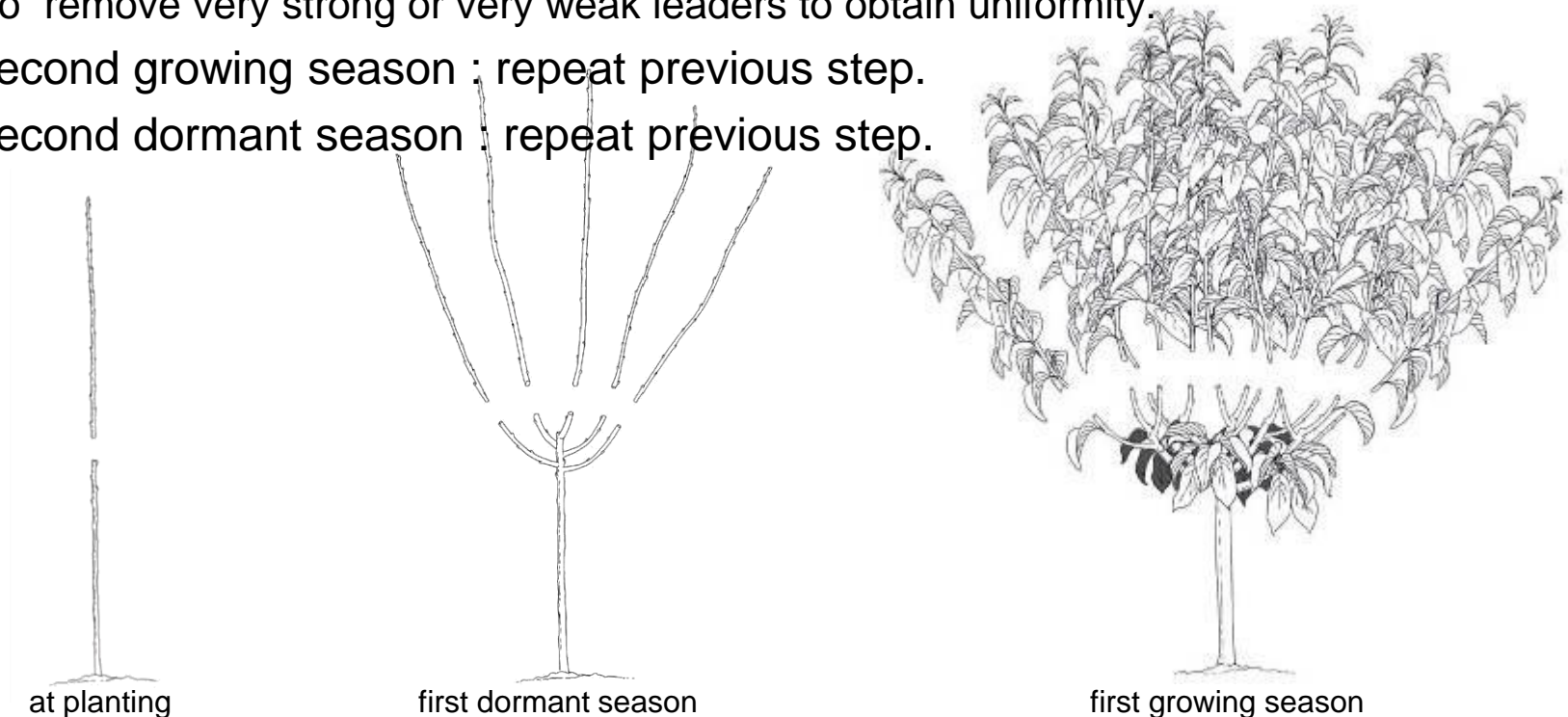
- **Recommended spacing**

- Vigorous rootstocks : 5 to 5.5 m between rows / 2.5 to 3 m between trees.
- Semi-vigorous rootstocks : 4 to 5 m between rows / 2 to 2.5 m between trees.

SPANISH BUSH

■ How to manage it?

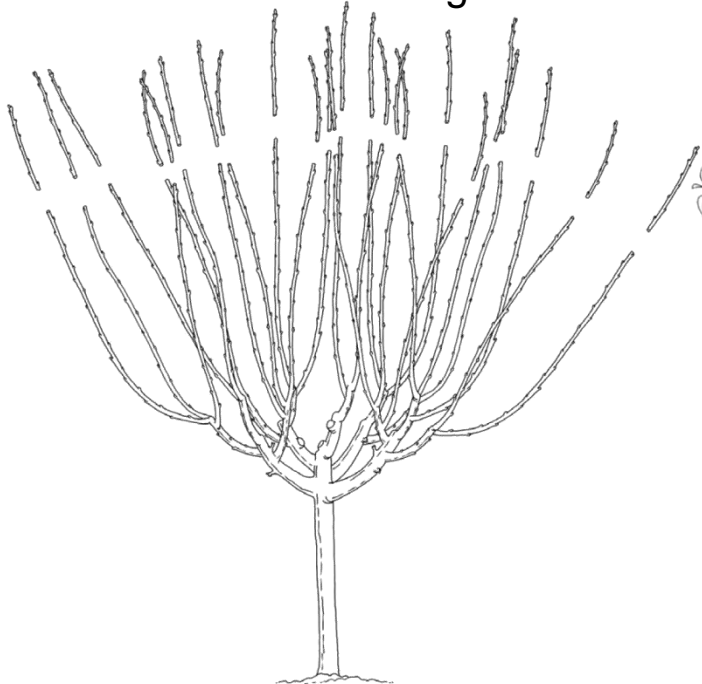
- At planting : head nursery tree 45 cm above the ground.
- First dormant season :
 - o head all leaders to 5 to 12 cm
 - o head strong leaders shorter than weak leaders
 - o remove very strong or very weak leaders to obtain uniformity.
- Second growing season : repeat previous step.
- Second dormant season : repeat previous step.



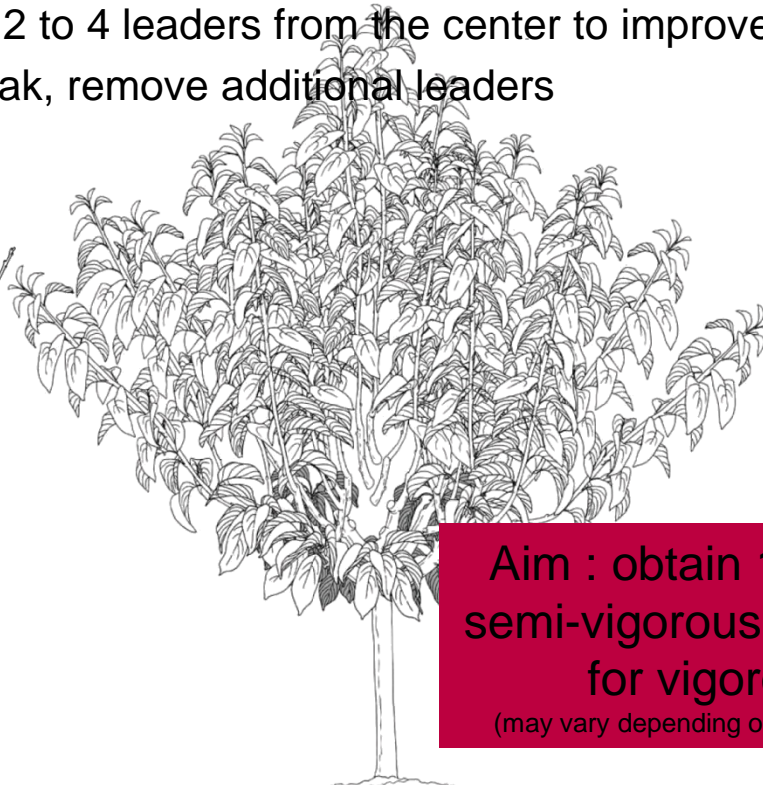
SPANISH BUSH

■ How to manage it?

- Third dormant season : for highly productive variety, remove a quarter of the new growth.
- Third growing season and after :
 - o If necessary, remove 2 to 4 leaders from the center to improve light penetration.
 - o If leader growth is weak, remove additional leaders



third dormant season



Third growing season

**Aim : obtain 12 to 16 leaders for
semi-vigorous rootstocks, 15 to 20
for vigorous rootstocks**

(may vary depending on soil fertility and other conditions)

SPANISH BUSH

■ How to manage it?

- Mature pruning :

Late summer or early fall

- o Top the tree at 2.5 m
- o Cut the sides of the tree

Dormant season

- o Renew horizontal fruiting wood on the permanent vertical leaders

Lateral branches are allowed to produce fruits several years before being renewed.

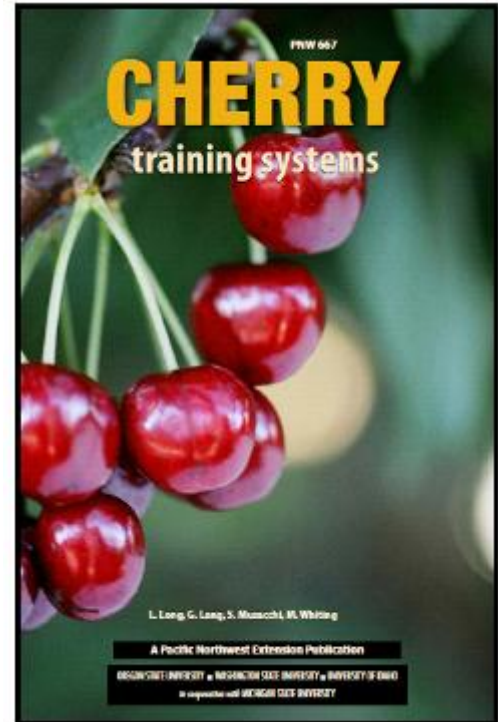


Mature pruning

SPANISH BUSH

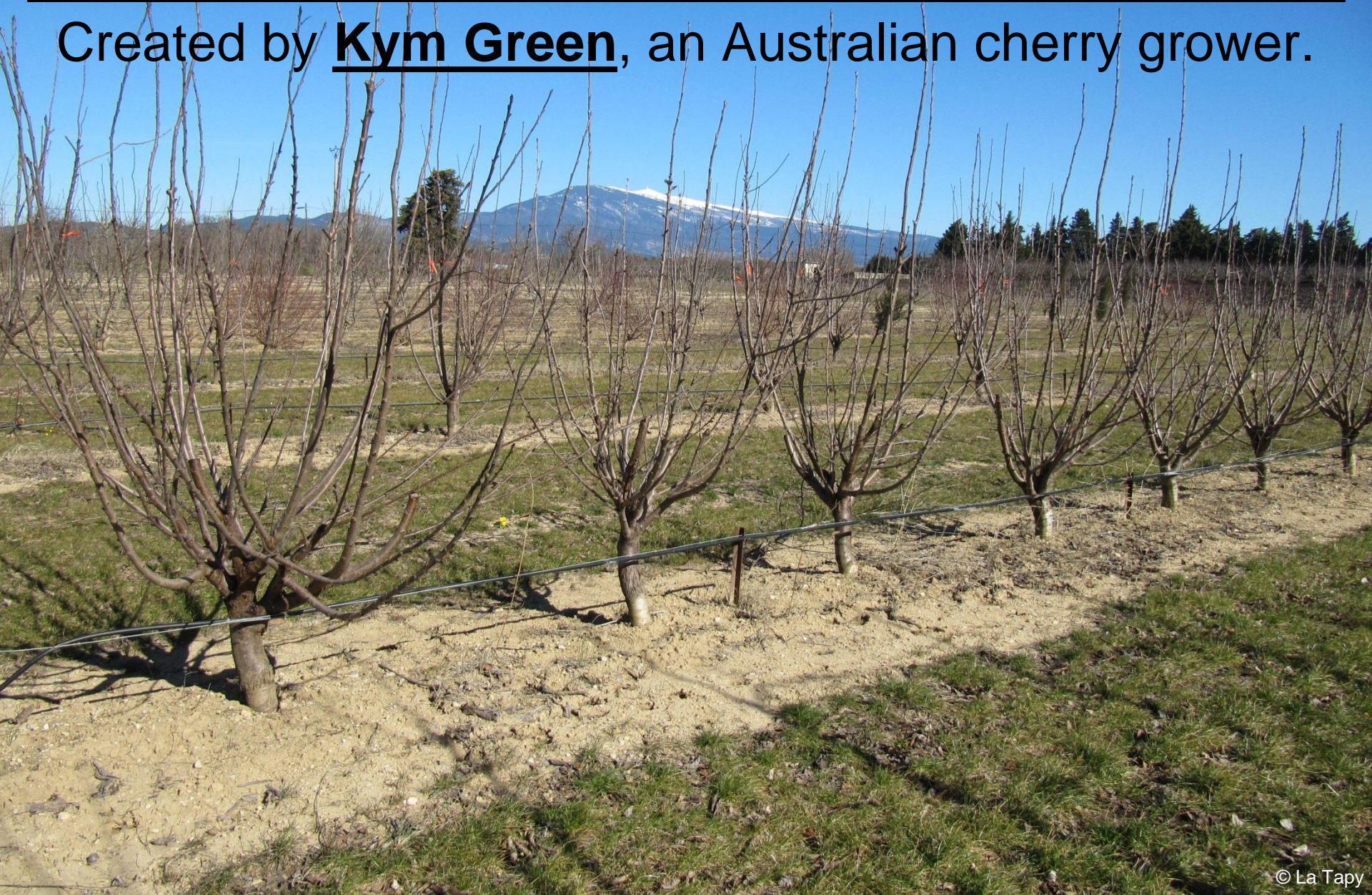
- No trials in France
- Informations are coming from the book « Cherry training systems » written by L. Long, G. Lang, S. Musacchi, M. Whiting

<http://www.hrt.msu.edu/assets/PagePDFs/greg-lang/PNW-667-Cherry-Training-Guide.pdf>



KGB system

Created by Kym Green, an Australian cherry grower.



KGB SYSTEM

■ What is it?

- A tree with a lot of vertical leaders, renewed regularly. The only permanent wood is the lower framework of the tree.
- Produce on vertical leaders.
- The number of vertical leaders should be proportional to tree vigor.

■ Why to choose it ?

- Allow to create a pedestrian orchard, even in conditions where vigorous rootstock is needed.
- Fast and easy to prune and harvest.



KGB SYSTEM

- **Recommended rootstocks**

Vigorous or semi-vigorous rootstocks : Maxma 14, Maxma 60, SL 64...

- **Recommended varieties**

Most of varieties produce well with KGB system, but non-spur varieties such as Regina are not recommended.

- **Recommended spacing**

- Vigorous rootstocks : 4.5 to 5.5 m between rows / 2.5 to 3 m between trees.
- Semi-vigorous rootstocks : 4 to 5 m between rows / 2 to 2.5 m between trees.

KGB SYSTEM

Establishment years : very similar to Spanish Bush

■ How to manage it?

- At planting : head nursery tree 50 to 60 cm above the ground.
- First and second dormant and growing season :
 - o head all leaders to 5 to 15 cm
 - o head strong leaders shorter than weak leaders
 - o remove very strong or very weak leaders to obtain uniformity.



Aim : obtain 12 to 16 leaders for
semi-vigorous rootstocks, 15 to 25
for vigorous rootstocks
(may vary depending on soil fertility and other conditions)

KGB SYSTEM

■ How to manage it?

- Mature pruning :
 - o Select 20% of vertical leaders for renewal (the most vigorous one) : let approximately 15 to 20 cm for renewal
 - o If necessary, remove 2 to 4 leaders from the center to improve light penetration.
 - o Remove all lateral branches



Pictures : John Morton

KGB SYSTEM

■ Trials in France

- Trial planted in 2011 (Ctifl) :
Varieties : Grace Star, Belge, Ferdiva
Rootstocks : Maxma 14, Krismk 5
- Trial planted in 2012 (La Tapy)
Comparison of 7 training system
Variety : Regina
Rootstocks : Gisela 6 or Maxma 60
- Trial planted in 2013 (Ctifl) :
Varieties : Folfer, Ferdiva, Regina
Rootstocks : Piku 1, Weiroot 158, Furtos, Maxma 14, Maxma 60, SL64
- Trial planted in 2014 (Ctifl)
Variety : Burlat
Rootstocks : Piku 1, Weiroot 158, Furtos, Maxma 14, Maxma 60, SL 64



Grace Star / MM14,
beginning of 3rd leaf

© Ctifl



Ferdiva / MM14, 5th leaf

© Ctifl

KGB SYSTEM

Trial planted in 2012

Research center La Tapy

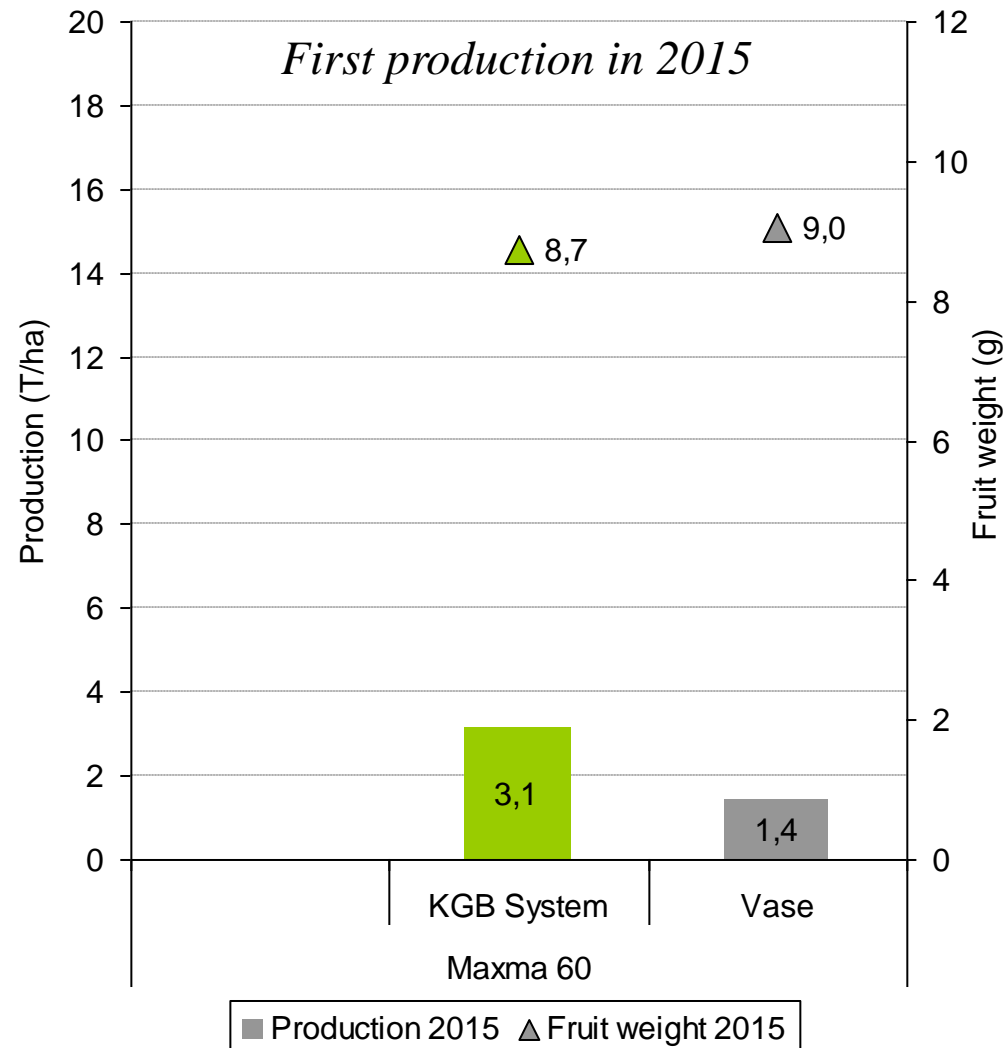
KGB system

Regina / M60

- More **precocious** than french traditionnal vase.

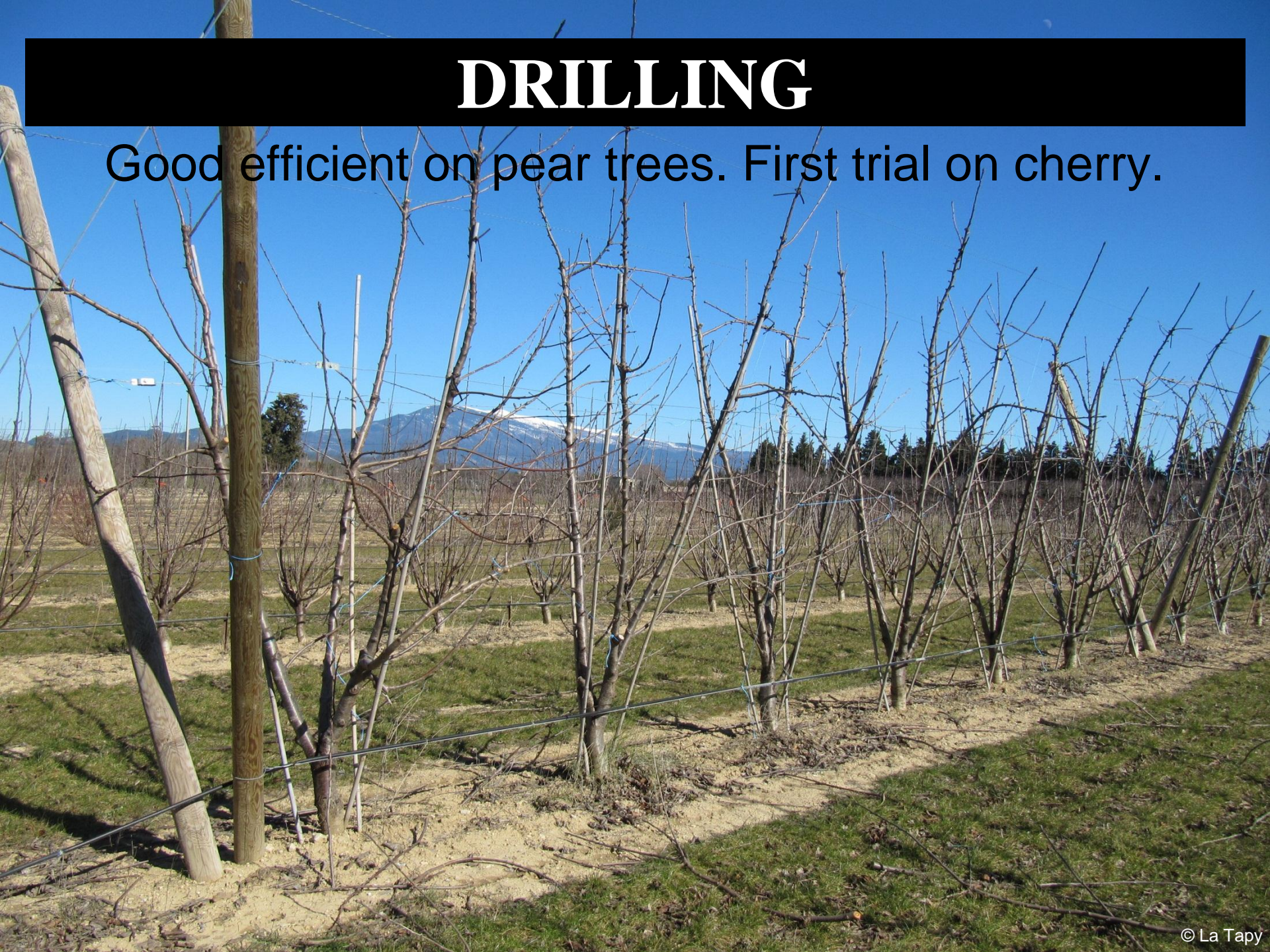


- Cost** of implantation similar to the french traditionnal vase.



DRILLING

Good efficient on pear trees. First trial on cherry.



DRILLING

■ What is it?

- Trellis in V shape
- Three-dimensional training system
 - o 2 leaders on one side, and 1 on the other side
 - o Vice-versa for alternate trees



DRILLING

■ How to manage it?

- At planting : head nursery tree 45 to 60 cm (approximately) above the ground.
- End of 1st year / Beginning of 2nd year
 - o Choose 3 axis and remove the others
 - o Scoring
- End of 2nd year / Beginning of 3rd year
 - o Scoring
 - o Tied axis
 - o Tied lateral branches
- End of 3rd year / beginning of 4th year
 - o Tied lateral branches



DRILLING

■ Trials in France

- Trial planted in 2012 (La Tapy)
Comparison of 7 training system

Variety : Regina

Rootstocks : Gisela 6 or Maxma 60

DRILLING

Trial planted in 2012

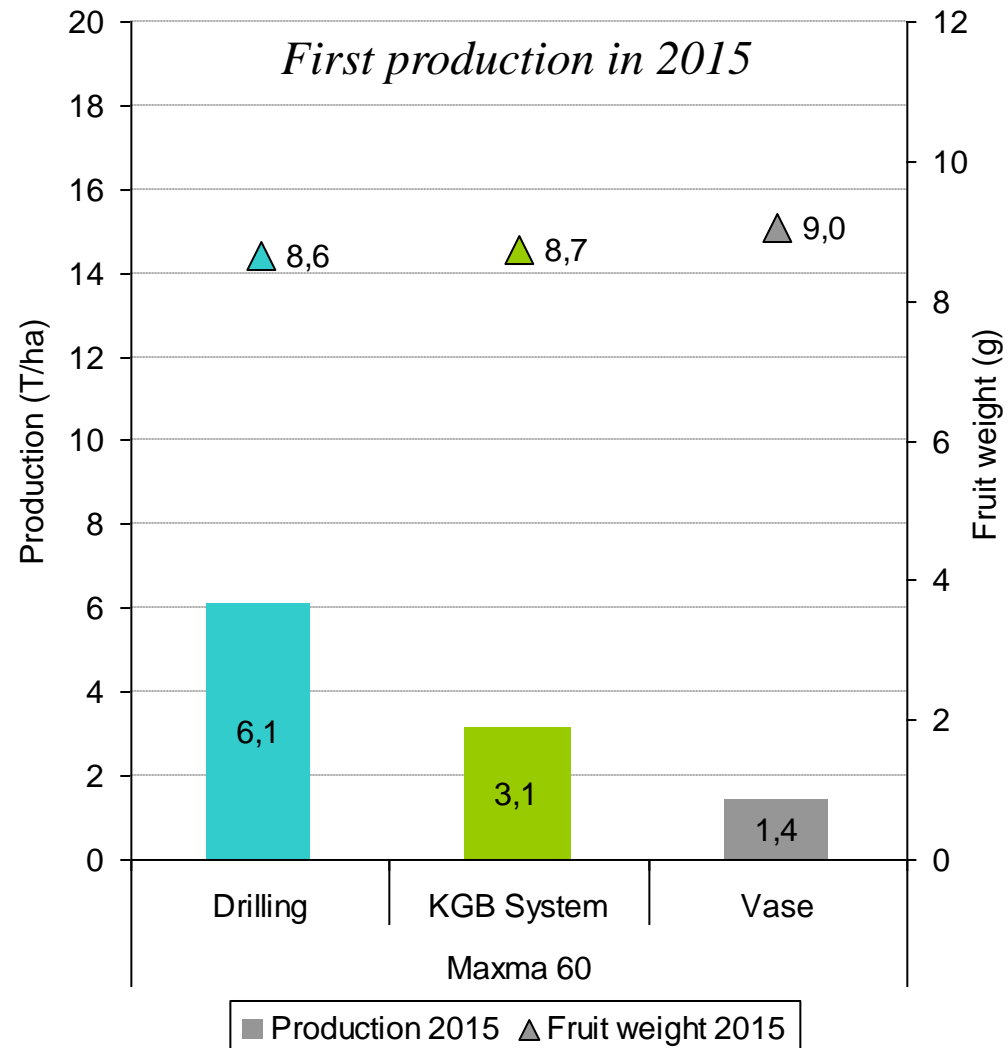
Research center La Tapy

Drilling
Regina / M60

- More **precocious** than french traditionnal vase.



- Compared to french traditionnal vase, **costs** are more importants : time is needed for treillis, notching, tied...



Thanks for your attention

