

# PINEA SPOT CONGRESS LISBON 2023 21 TO 23 NOVEMBER

## Anticipation of annual cone harvesting in *Pinus pinea* L.: Scientific background and advantages for the Portuguese sector



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### What we want to know ?

The legal harvesting period for *Pinus pinea* L. cones in Portugal\* is from December 1<sup>st</sup> (inclusive) to March 31<sup>th</sup>. There is evidence that kernels are potentially ready for harvesting much earlier.

\* DL n.º 77/2015 from 12 May, nr 1 from article 4th)

### Is it safe to harvest cones prior to December in Portugal from an economical perspective ?

### How and where?



- ✓ 3 sites
- ✓ 6 random cones/site
- ✓ Monthly collections from July to November (2021)
- ✓ In one site, the experiment ran until March of the following year (2022).

### What we measured ?

- Morphometry of cones and kernels
- Kernels damages and the kernel yield
- Chemical properties, fat and protein content, fatty acid profiles

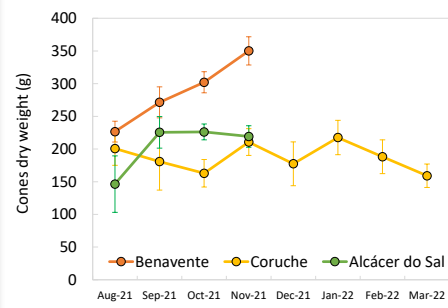
### How does it work in Spain?

		Nov	Dez	Jan	Feb	Mar	Abr	Mai	Jun
Catalunha	Legal period (DL 1995)	1							15
	Flexible period		+15						
	Mechanical harvesting								
Castela e Leão	Legal period (DL 2014)	11							10
	Flexible period								
	Mechanical harvesting								
Andaluzia	Legal period (DL 2013)	1							15
	Flexible period		+15						
	Mechanical harvesting	1				28			
Extremadura	Legal period (DL 2019)	1							15
	Flexible period								
	Mechanical harvesting	1							15
Portugal	Legal period					1			30
	Flexible period								
	Mechanical harvesting								

The **anticipation** of cone harvest no **1<sup>st</sup> November** would allow forest owners and managers to better **plan their harvests, minimise theft and reduce informal transactions** which are structural problems already reported, helping to create a safer and structured sector.

### What did we find ?

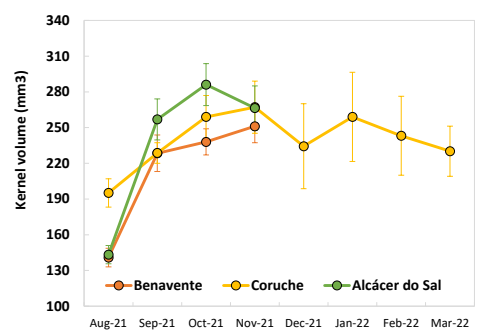
#### Are the pine cones still growing in November?



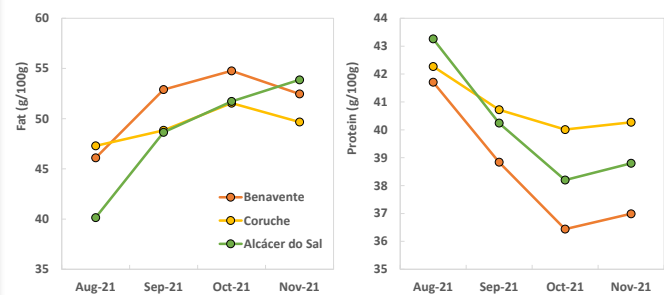
In two sites the growing trend seems to cease in August/September. In the most productive site (Benavente), the hydrogeological and fertility characteristics are favorable to plant productivity so the cones seem to constantly expand, probably beyond November.

#### Is the kernel fully formed in November?

Kernel volume seems to stabilize from October/November onwards.



#### How does the kernel quality vary over time?



The date of harvest does not affect the fat composition in fatty acids and the protein content seems to stabilize from October onwards.

### Conclusions

**Matching** the period of cone harvesting in Portugal with other Mediterranean countries (particularly Spain) is essential to **ensure market transparency and avoid informal commercial circuits.**

