

Field data (Each questionnaire refers to one crop species cultivated per field)

Municipality : Miralsot

Latitude : 41.33051

Longitude : 0.17062



Field Size (ha) \_\_\_\_\_

Crop Species

<input type="checkbox"/> olives	<input type="checkbox"/> vineyards	<input type="checkbox"/> apples	<input type="checkbox"/> pears
<input type="checkbox"/> peaches	<input type="checkbox"/> apricot	<input checked="" type="checkbox"/> nectarine	<input type="checkbox"/> plum
<input type="checkbox"/> cherries	<input type="checkbox"/> oranges	<input type="checkbox"/> tangerines	<input type="checkbox"/> lemons
<input type="checkbox"/> grapefruit	<input type="checkbox"/> hazelnuts	<input type="checkbox"/> chestnuts	<input type="checkbox"/> almonds

Variety of crop Nectarine two tone ("bicolor")

Age of crop 9

Density (trees/ha) 645

Width between rows (m) 5.0

Distance between trees (m) 2.5

Crop form

Crop forms for vineyard



Vase



Espalier



Marquee

Crop forms for Olive



Ancient olives



Vase (1 stem)



Vase (2-3 stems from soil)



Bush (intensive 250-600 trees/ha)



Superintensive (>1500 trees/ha)

Crop forms for fruit trees



Natural



Vase



Bush/Globe (very small trees)



Spindle/Pyramid



Palm/Fan



Epsilon transversal

Slope (%) 0

Soil Cover



Bare.No grass cover. Tillage several times per year



Seasonal occurrence. Herbicides+mowing <50% soil cover



>50% grass cover. Mowed several times per year



100% Grass cover. Mowed several times per year

### Crop Yield

Average Crop yield (t/ha) 30

Irrigation  rain fed  partial irrigation  fully irrigated

Intensification degree  organic  low  intermediate  
Specify the amount of fertilizer and pesticides  high

**Plantation Removal Information**

Were the plants removed at a typical age for such crops ?

Yes
  Younger than typical
  Older than typical
  Don't know

Reason for plantation removal

Old age (renovation)
  Change of crop
  Change of variety
  Change of planting pattern
  Plant disease

Equipment for plantation removal

Felling with chainsaws
  Uprooting whole tree with excavators
  Shredding the whole tree (shredder mounted in front of tractor)
  Aereal part with Menzi mack with chipper, Roots with excavator

Intended use of the plantation

Check how do you manage/use the plantation removal wood for each part of the plantation. Check as many as apply

	Roots	Stems	Thick branches	Fine branches
Abandoned at field side	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Burnt in fires at open air	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mulched as soil cover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shredding and integration to soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Firewood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Specify the minimum diameter you consider for 'thick' branches used as firewood (mm)

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Cost for removing 1 hectare when contracted to a company (€/ha)

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270

## Mechanized Collection

### Plantation Removal Method

Check according to the figures below the uprooting method that is used.



Aerial part of the tree felled by operators with a chainsaw



Aerial part of the tree felled with a machinery



Only roots treated with an excavator/tractor with shovel



Full tree up-rooted with excavator

**Preparation of the wood prior to treatment** Specify the method that plantation removal are prepared prior to treatment



No preparation - Trees are felled/up-rooted and left to be gathered by chipper



Trees in piles



Roots in piles



Trees are felled/up-rooted and left to be gathered by chipper

In case roots were collected for producing wood, did the operators shake the whole tree/roots stocks to detach soil before piling or treatment ?

Yes

No

### Specifications of preparation processes of biomass

Specify the manpower, productivity, fuel consumption needed in order to prepare the plantation removal for treatment

Check as many as apply

Processes	Manpower (Nr of persons)	Gross working time (hr/ha)	Productivity (t/ha or t/hr)	Fuel consumption (l/hr)
Up-rooting whole trees (tree+root)	<input type="checkbox"/>			
Felling the trees	<input checked="" type="checkbox"/> 1	3.6	6.78 t/hr	10.7
Up-rooting roots	<input checked="" type="checkbox"/> 1	6.0	6.1 t/hr	10.7
Preparing piles	<input checked="" type="checkbox"/> 1	1.6	15 t/hr	13

### Type of plantation treatment and model of machinery

Specify the method that plantation removed are treated based on the outcome product and manufacturer-model of each machinery (crusher, shredder, chipper) that is used if applicable.

Specify the theoretical-from 'catalog' volume of plantation per hour that can be processed by the machinery.

Check as many as apply



Crusher - Large pieces after breaking tree/roots

Crusher (manufacturer-model) \_\_\_\_\_

Farmer \_\_\_\_\_



Shredder - Produce finer material (hammers or knives, not clean cut)

Shredder (manufacturer-model) \_\_\_\_\_

Doppstadt AK-430

Farmer \_\_\_\_\_

Farmer's community \_\_\_\_\_



Chipper - Clean cut. Resembles the typical form of forest woodchips

Chipper (manufacturer-model) \_\_\_\_\_






Farmer \_\_\_\_\_

Farmer's community \_\_\_\_\_

**Treatment methods**

Check according to the figures below the treatment method that is used for the plantation removal biomass.

Check the process used for either "A":aerial part of the tree, "R":roots or "B": when both aerial part and roots (all tree) is processed together. IF A and R are collected and processed separately, check the corresponding boxes for each case.

Processes	Manpower (Nr of persons)	Productivity (t/ha or t/hr)	Fuel consumption (l/hr)
 Treatment of material with primary crushers A <input type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>			
 Treatment of material with screening A <input type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>			
 Treatment of material with shredders/chippers A <input checked="" type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>	1	2.4t/ha	21.7
 Treatment of material with shredders/chippers with horizontal feeding table A <input type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>			
 Chipping of crunched pieces in a static chipper A <input type="checkbox"/> R <input type="checkbox"/> B <input type="checkbox"/>			

**End product properties**

Specify the properties (moisture,bulk density,particle size,ash) of the prunings after treatment and harvesting, if known

Moisture (% a.r.)	<u>36.4</u>	Particle size (cm)	<u>                    </u>
Bulk density (kg/m3)	<u>121.1</u>	Ash content (% dry basis)	<u>                    </u>

Losses of biomass after harvesting

(%)                      or (tonnes/ha)                     

Problems encountered due to the field

- Soil uneven
- Slope
- Stones
- Too much grass

Problems encountered by the machines

- Not suitable for the pruning
- Manouvering
- Unsuitable feeding system (biomass difficult to be conveyed)
- Too much soil particles with the biomass to be treated
- Problems in discharge

Performance of the machinery

- The machinery was performing better than expected
- The machinery was performing normally-typical expected
- The machinery was underperforming

### Value Chains

Indicate if your experience is based on an isolated test or if it based on an existing value chain:

- My experience is just an experimental trial-machinery test
- My experience is part of an existing value chain



## Contact Data

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**uP running project mechanized collection experience** performed by CIRCE. This experience was one of the demo activities that Spain performed during the uP\_running project.



Photos

