Questionnaire for Mechanized Collection Prunings

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

Municipality : Mazaleon

Latitude : 41.067917

Longitude : 0.096005

Field Size (ha) 0.5

Crop Species

- [x] olives
- [ ] vineyards
- [ ] apples
- [ ] pears
- [ ] peaches
- [ ] apricot
- [ ] nectarine
- [ ] plum
- [ ] cherries
- [ ] oranges
- [ ] tangerines
- [ ] lemons
- [ ] grapefruit
- [ ] hazelnuts
- [ ] chestnuts
- [ ] almonds

Variety of crop: Arbequina

Age of crop: 6

Density of crop (trees/ha): 1350

Width between cultivated rows (m): 4.0

Distance between trees (m): 1.8

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

☐ Epsylon transversal

Slope (%)

Soil Cover

☐ Bare.No grass cover.
Tillage several times per year

☐ Seasonal occurence.
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) _____

Crop yield before measurement (t/ha) _____

Ammount of product obtained for the year that the pruning measurement is perfomed in tonnes per hectare

Irrigation

☐ rain fed
☑ partial irrigation
☐ fully irrigated

Intensification degree

Specify the amount of fertilizer and pesticides

☐ organic
☐ low
☑ intermediate
☐ high

Pruning Operations Performed

Type of pruning

- [x] Maintenance
- [ ] Grafting
- [ ] Structuring
- [ ] Topping
- [ ] Removal of old branches
- [ ] Blooming

Pruning Method

- [x] Only manually
- [ ] Mechanised pre-pruning + manual
- [ ] Fully mechanised

Pruning Operations

Specify the pruning operations that are carried out. Check as many as apply.

- [ ] Manually shears

- [ ] Assisted shears

- [x] Chainsaw/ armchainsaw

☐ pre-pruner:hedge trimmer

☐ pre-pruner:discs

☐ pre-pruning topping

Season of pruning

- ☐ January
- ☐ February
- ☑ March
- ☑ April
- ☐ May
- ☐ June
- ☐ July
- ☐ August
- ☐ September
- ☐ October
- ☐ November
- ☐ December

Frequency of pruning

- ☑ annual
- ☐ biannual
- ☐ biennial
- ☐ Once per years

Mechanized Collection

Preparation of the field prior to harvesting

☐ No preparation - prunings were left on the soil as they fall from tree

☑ Centre-operatos position prunings on the center of the lane between tree rows

☐ Centre alligned-operators position prunings in a specific position in center
(e.g. alligned with the direction of the row)

☐ Previous windrowing-a tractor with windrower is used prior pruning harvester

☐ Integrated windrower to the pruning machine

Harvesting methods

Check according to the figures below the harvesting method that is used for the pruning biomass

Manual cross-cutting of firewood+gathering at field side

☐

Forestry chipper towed by tractor + manual feeding

☐

Hauling the branches + shredding/chipping at field side

☐

Hauling the branches + baling at field side

☐

Harvest with mulcher/chipper in front

☐

Harvest with mulcher/chipper at rear

☐

Harvest with rear mulcher/chipper and bin

☐

Harvest with rear
mulcher/chipper and big-bags

☑

Automotive shredder/chipper
with rear trailer

☐

Harvest with standard hay baler

☐

Harvest with rear baler prepare
for wood or tree branches

☐

Pre-pruning integrated with
collection and mulching/chipping

☐

Pre-pruning integrated with
collection and mulching/chipping
in an automotive machine

☐

Type of pruning treatment and model of machinery

Specify the method that prunings are treated based on the outcome product and manufacturer-model of each machinery (windrower,mulcher,chipper,baler) that is used if applicable

☐ Windrower-Machines that allign biomass in a row

Windrower (manufacturer-model) _____

☐ Mulcher-big pieces. Machines that break the branches in big pieces. Normally they are an evolution from the typical muchers/cruchers utilised to leave the branches on the soil in pieces.

Mulcher (manufacturer-model) _____

☐ Shredder - Produce finer material (hammers or hammers with a knive.Do not produce a clear cut)

Shredder (manufacturer-model) _____

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

Chipper (manufacturer-model) ONG SNC (model PC50 chipper)

☐ Round bale

Baler (manufacturer-model) _____

☐ Squared bale

Baler (manufacturer-model) _____

Processes Specifications

Specify the specifications of the processes (manpower,gross working time, productivity, fuel consumption)

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)
☐ Manual Alignment				
☐ Windrowing				
☑ Integrated harvesting/treatment	1	2.85	1.14 t/h	9.7
☐ Hauling				
☐ Treatment at field side				

Disposal/dumping of biomass ☐

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

Moisture (% a.r.) 33.7
Particle size (cm) Similar to

Losses of biomass after harvesting

(%) 25 or (tonnes/ha)
Bulk density (kg/m3) 183
Ash content (% dry basis)

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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References-External links:Provide references on which the information is based on or highlight any comments

EuroPruning Deliverable D6.2, CIRCE, 2016. Results with conclusions of each demonstration (by zone
www.europruning.eu

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Photos

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