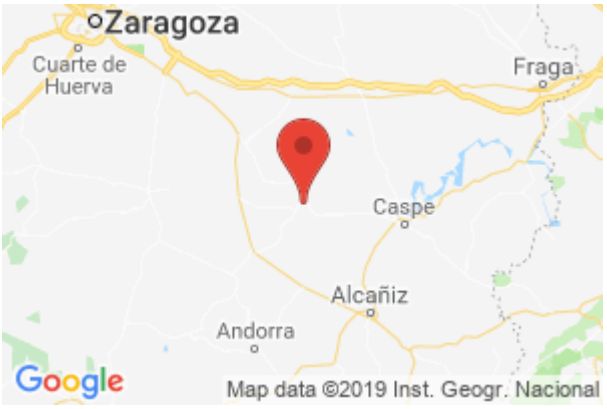
Questionnaire for Mechanized Collection Prunings

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

Municipality : Escatron

Latitude : 41.274775

Longitude : -0.316395



Field Size (ha) >30

Crop Species

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

Variety of crop empeltre

Age of crop

Density of crop (trees/ha) 300

Width between cultivated rows (m) 6.0

Distance between trees (m) 5.0

Crop form

Crop forms for vineyard

☐ Vase

☐ Espalier

☐ Marquee

Crop forms for Olive

☐ Ancient olives

☐ Vase (1 stem)

☐ Vase (2-3

☑ Bush (intensive 250-600 trees/ha)

☐ Superintensive (>1500 trees/ha)

Crop forms for fruit trees

☐ Natural

☐ Vase

☐ Bush/Globe

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

- [x] Assisted shears

- [ ] 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) SERRAT (model Biomass 150)

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

Chipper (manufacturer-model) _____

☐ 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	n.d.	2.7 t/h	16
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.) 30

Particle size (cm) Similar to

Losses of biomass after harvesting

Bulk density (kg/m3) 183 (%) or ~~(tonnes/ha)~~

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:

- [x] My experience is just an experim
- [ ] My experience is part of an existing value chain

Contact Data

Name : Daniel García Galindo

Email :

Phone :

Profession :

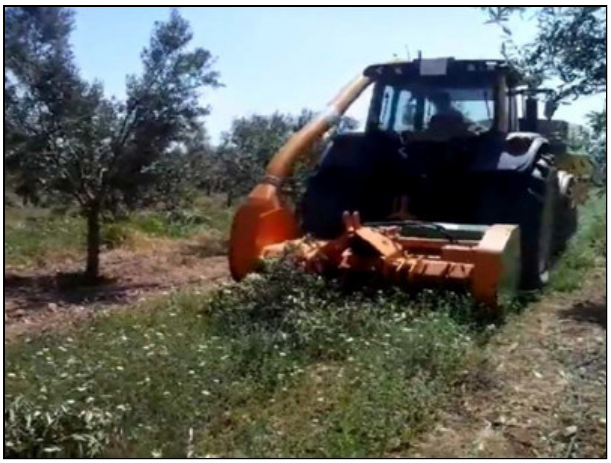
Country : Spain

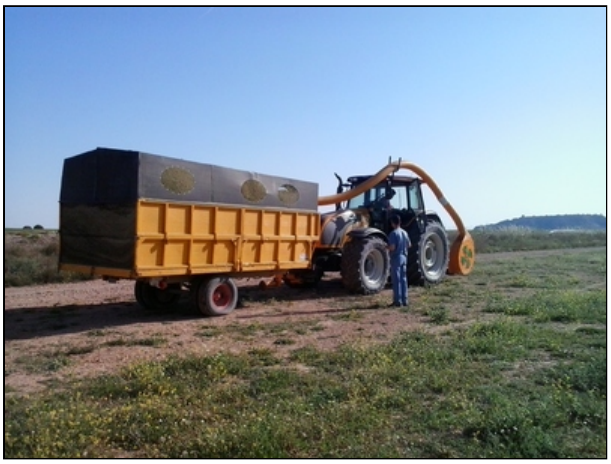
References-External links:Provide references on which the information is based on or highlight any comments

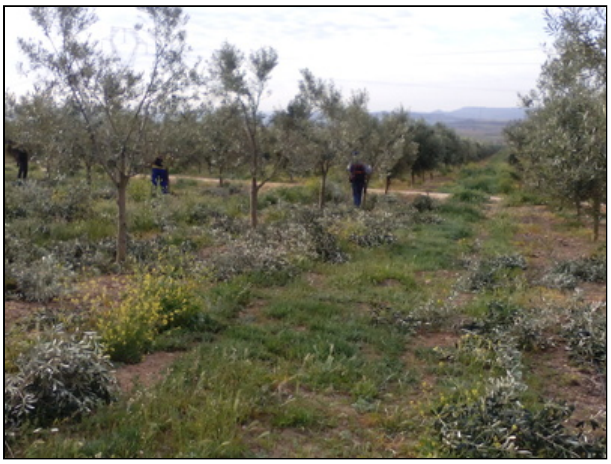
EuroPruning Deliverable D6.2, CIRCE, 2016. Results with conclusions of each de
www.europruning.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691748

Photos







euro
prun