



**Obtaining separately
aboveground and stump
biomass from fruit tree
plantation removals**

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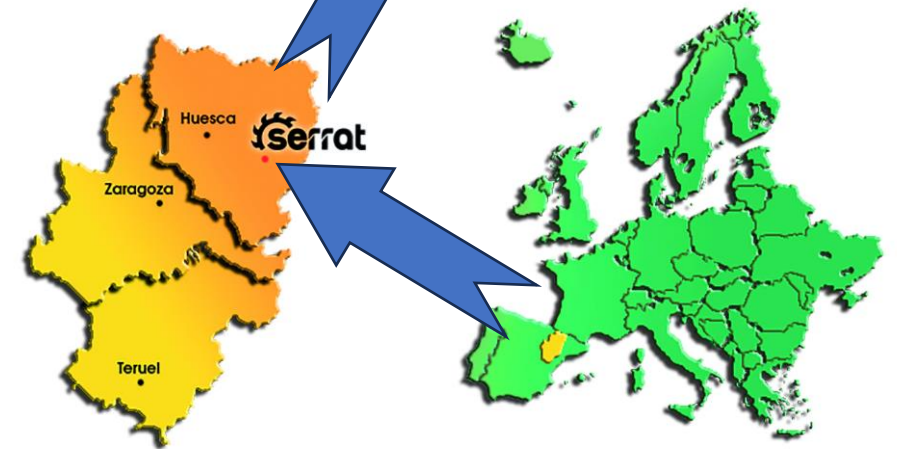
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About Serrat

1. **SERRAT MULCHERS** is a Spanish company dedicated to the manufacturing of forester and agricultural grinding machines, industrial gardening and public works.
2. Founded on 1998.
3. More than 70 qualified employees.
4. Factory equipped with more than 5.000 m² covered.





About Serrat

1. For more than 20 years Serrat has developed equipment for gathering agricultural and forestry biomass.
2. Orientated to systems allowing to solve specific operations needed in the value chain.
3. Always considering the mode that facilitates to match a market niche / solve an existing problem





2. Problem to be solved

- Spain 1.5 Million hectares of fruit tree (excluding olive and vineyards)
- Among them 0.5 Million hectares of pome fruit, stone fruit and citrus (1.8M in Europe)
- Cropping cycle getting shorter to adapt varieties and market demand (specially stone fruits 8-10 years)





2. Problem to be solved

- When terminating a plantation:
 - Costs of uprooting and restoring the field
 - Uprooting stumps costly. Subject of environmental concerns.
 - Biomass from roots include stones and soil causing difficulties
 - Treatment
 - Higher costs
 - No final use of high added value





2. Problem to be solved

- **Result:**
 - High costs for restoring the plantation.
 - Low-value applications





3. Solution

1. Interpiquet high-cut:

- ***Tractor 70-105HP***
- ***Up to 150-200 mm diameter***
- ***Mechanical transmisión***
- ***2 h/ha***







2. Biomass 400

- **Tractor 300-500 HP**
- **Up to 200-250 mm diameter**
- **Start system HIDRAHELP**
- **Launching nozzle download 4m**
- **Woodchips used as fuel directly in biomass boilers**
- **2,5h/ha**

3. Solution







3. Solution

3. Totem-4

- **Tractor 200-350 HP**
- **750mm mulching width**
- **Depth Up to 400-500 mm**
- **Integrate stumps into soil**
- **Ready for the next planting**
- **Leaves soft ground**
- **2,7h/ha**







3. Solution

Before

See video of the three steps



After





3. Solution

Almost 2000t of biomass produced.





4. Advantages

- Farmer contracts a complete service
- Good quality biomass
- 20-30 t/ha of fresh biomass
- Low effects on soil
- Stumps mulched and incorporated into the soil





4. Advantages

- Reduce costs of plantation removal and restoration of soil **up to 50%**





5. Establishment

- ✓ Areas with high concentration of fruit tree plantations
- ✓ Ideal for Service companies or farm explotations managing large amount of hectares.
- ✓ Companies having already several machinery to reduce initial investment.





6. Awards

- Special mention in Bologna Fair EIMA International Agricultural and Gardening Machinery Exhibition in 20/21





Thank you for your attention

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