

BIOKENAF

WP7 - Economic Analysis of the Crop Production Chain

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Objectives

1. **Economic assessment of the whole production chain from establishment, maintenance through to harvest and delivery**
2. **Compare Kenaf to conventional crops in the south EU region**

Questionnaire listed inputs:

Kenaf

Determine variable and fixed costs of production

- establishment
- maintenance
- harvesting

Revenue streams

- industrial end-uses
- biofuels
- subsidies

Comparison with traditional crops in the region
e.g. cotton, corn, sunflower

Costs of Production – WP2

Establishment

- seed
- land preparation (ploughing/harrowing)
- herbicide
- fertilisation
- irrigation
- weed control
- sowing

Annual Husbandry

- fertilisation
- irrigation
- weed control?

Results so far

- **Data received from:**
 - Italy – University of Catania
 - Spain – INIA
 - Portugal – Lisbon university
 - France – INRA
- **Issues:**
 - Relates to tasks 2.2 and 2.3 – smaller scale trials
 - Task 2.4 will give larger scale production and non-manual labour inputs

Standard Planting - 200,000 plants ha⁻¹ (€ha⁻¹)

Task	Portugal	Italy	France	Spain
Seed purchase	?	?	?	?
Labour costs of planting	976	4464	114	21
Ground preparation	427	250	78	95
Total planting and ground prep:	1403	4714	192	116

Herbicide (€ha⁻¹)

	Portugal	Italy	France	Spain
Herbicide costs	N/A	69	282	13
Application costs (sprayer and labour)	N/A	30	40	21
Total	N/A	99	322	34

Standard Fertilisation used in task 2.2 (€ ha⁻¹)

	Portugal Estimate: 150 kg N ha ⁻¹	Italy 60 kg N 160 kg P ₂ O ₅	France 150 kg N ha ⁻¹	Spain At sowing: 400 kg of 8-15-15 50 cm tall: 100 kg NH ₄ NO ₃
Cost of fertiliser	140	57	69	80
Machinery hire	170	1 hour	18	-
Labour	Included above	1 hour	23	21
Total	320	57	110	101

Standard Irrigation – as for 2.2 (€ ha⁻¹)

	Portugal Assumes 0%PET	Italy (1 x 20mm)	France	Spain Assumes just one irrigation?
Set-up costs -	4060	78	N/A	
Maintenance costs	500	100	N/A	
Annual costs	3244	?	N/A	46
Total	7804	178	N/A	46

Other costs

- Fencing: Portugal spent: €2270 ha⁻¹
- Insecticides: France spent €153 ha⁻¹
- Bologna mention Fusarium and Rhizoctonia test
- Other?

Future data on production costs

- Need to decide on optimum planting and fertilisation regimes and perform sensitivity analysis on this
- **CRES – Greece**
- **INIA – Spain**
- **Lisbon – Portugal**
- **NAGREF – Greece**
- **AGRICOLA – Italy**

Future inputs

Harvesting (WP4):

- harvesting method
- transport (fuel/tyres/repairs)
- storage

Revenue from existing and potential markets:

- Industrial products
- Biofuels: large scale electricity generator and farm based smaller generating capacity

Subsidies:

- Area payments
- Planting grants
- Tax credits

Sensitivities

- **Examine opportunities for reducing crop production costs (WP2 and WP3)**
 - e.g. sewage sludge fertiliser
- **Yield per hectare (WP2 and WP3)**
- **Transport distances (WP4,5,6)**
- **Income per tonne (WP5 and WP6)**
- **Labour costs (WP2,4,5,6)**
- **Discount rate**
- **Subsidies**

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