



## SUMMARY FACTSHEET – CAMELINA



*Camelina sativa* is an annual C3 crop in the family Brassicaceae cultivated as winter or spring oilseed crop. Both spring and winter biotypes are available in the market.

Seeds contain up to 42% of oil and up to 30% of protein. Camelina oil is very rich in polyunsaturated fatty acids, with a composition like flax.



*Camelina sativa*  
Photo: University of Bologna, Italy

Original area of cultivation: Europe and Central Asian areas.  
Primary end use: Biodiesel and jet fuel  
Preferred kind of soils: Temperate climate zone in light or medium fertile soils. One of the only summer crops adapted to drying soils.  
Crop establishment: Early spring (March-May) for summer varieties.  
Plantation density: Seeding rate of 3-4 kg/ha and sown at 1cm depth and in rows with interval of 12-20 cm.  
Production: Camelina grows to heights of 30–120 cm. Short-season crop (90-120 days). Seed yield is approximately 1,5 t DM/ha and can reach 3 t DM/ha in favourable conditions.  
Harvest: From beginning of June to Jul for winter or spring varieties (end of summer for summer varieties as double crop).

### Crop assets and constraints:

Assets	Constraints
Low input crop and tolerant to diseases.	Best yields on large fields are still below rapeseed yields in the same location.
Short growing period. Can be used in double cropping systems.	Seed size is small leading to harvest losses.
High tolerance to summer drought. Resists better than rapeseed in lack of water (provided that the rainfall is adequate until flowering). Can become an important factor in global warming context.	Perennial weeds may be difficult to control. Some specialized oilseed herbicides can be used on it.
Higher nitrogen efficiency than rapeseed.	Susceptible to sclerotinia stem rot.
Highly resistant to black leg and <i>Alternaria brassicae</i> .	Sensitive to blight and powdery mildew.
Can be grown on marginal agricultural lands.	
It may be used as a rotation crop for wheat and other cereals, to increase the health of the soil.	

### **Focus on:**

#### **Crop Establishment**

Seeds can be sown in spring. Seedlings can tolerate mild frosts and germinates well at temperature of 2-3 °C. The seeding rate for camelina is 3-4 kg/ha and sown at 1 cm depth and in rows with interval of 12-20 cm.

Camelina can be seeded with conventional farm equipment which makes it easier for farmers to adopt.

#### **Crop management**

Camelina is a low input crop and can survive with little water and fertilizer.

It requires the optimal nitrogen dose of 185 kg N/ha. Higher nitrogen efficiency than rapeseed.

Pest resistance and low maintenance crop. It is not a competitive crop therefore some herbicides are needed to be used to control the perennial weeds. Tolerant to insects and diseases therefore it does not require pesticides. Camelina farm though needs management techniques to control mildew and slugs.



## Harvest

Camelina is harvested in late July most years. When the pods turn yellow-brown they can be harvested.

Camelina can be harvested with conventional farm equipment which makes it easier for farmers to adopt.

Storage: optimum seed moisture content is 8,5%.

## Potential biomass production according to location/soil nature and crop management

	Soil	Cycle duration	Harvest date	Seed production
<b>Favorable situation</b>	Light and medium fertile soils	5-6 months	From June to July	2-3 t DM/ha
<b>Unfavorable situation</b>	?	5-6 months	From June to July	< 1,5 t DM/ha

### Production Costs

Comparable to rapessed due to :

- lower inputs
- but lower yield

### Environmental

Water consumption: Low

Phytosanitary inputs: Low input crop but still needs some herbicides.

Energy production/consumption: Total amount of energy used to produce 1 t DM of camelina seeds: 12,17 GJ/ t DM. Average energy gain from production of camelina: 56,33 GJ/ha.

Low GHG Emissions: < 1000 kg CO2/ha

## Non-food valorizations:

- Nowadays use :
  - Biodiesel for road transport;
  - Jet fuel for aviation;

- Developing use:
  - Chemicals (alkyd resins for paints and varnishes, epoxidized oils as plasticizers, lubricants, ...)



**PANACEA**

Non Food Crops for a EU Bioeconomy