LIGNOVIS
"grow your energy"

How to grow Short Rotation Coppice (SRC) Plantations

Cultivating fast growing wood plantations on agricultural land

Planning, planting, managing, harvesting for high yields and attractive economics

Planning, planting and managing a short rotation plantation

Prior to planting

Autumn till spring

1. Planning & plantation layout:

- Determine the plantation considering the field size as well as the intended harvesting and managing technology
- Check for regulations or restrictions with local authorities, especially regarding habitat preservation and flood control
- Select and order the appropriate poplar and willow varieties (delivery should be on time with planting)

2. Soil preparation:

- Apply a total herbicide, esp. in the case of high weed density
- Break up compaction in the sub soil with a deep ripper or crush dense sods if necessary
- Deep plowing (at least 25 cm) – already in autumn if possible
- Prepare a fine crumb structure and weed-free seedbed with a cultivator and finisher shortly before planting

March till May

3. Planting:

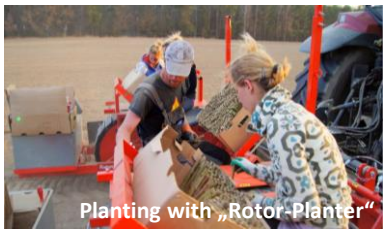
- Establish the SRC with a planting machine, or
- Plant smaller plots by hand with spades or hammers and leading lines
- Basic principles for planting:
  - *Insert cuttings vertically into the ground*
  - *Buds should always point upwards*
  - *Ensure a tight cutting – soil contact*
  - *20 cm cuttings should be inserted almost completely in the ground (up to 2 cm above is OK), longer cuttings should be inserted with at least 2/3 of their length*
  - *Ensure accurate row distance (facilitates management and harvest)*
- Apply a pre-emergent herbicide (e.g. Dimethenamid-P/ Pendimethalin) with a field sprayer or knapsack sprayer shortly after planting – please consider national regulations
- If the area is managed organically, app. 3-4 mechanical weed control measurements might be necessary

June till September

4. Management of the young plantation:

- As a prerequisite for high yields and attractive profitability the plantation should be kept clean of competing vegetation during the first 4 months
- The plantation should be monitored regularly to allow for a quick response in case of emerging weeds or other calamities
- Use of rototillers, cultivators or disc harrows as mechanical weed control (mulching or mowing are less effective)
- Competing vegetation within the row could be removed manually (e.g. with a hoe), if necessary
- Selective herbicides represent an alternative to mechanical weed control against resilient grasses and thistle (please consider local regulations and approvals of herbicides)


Seed bed preparation


Planting with „Rotor-Planter“


Planting with „Step-Planter“


Planting by hand


Weed control with rototiller


Weed control with hoe


Weed control with disc harrow

Interim results:

A well managed short rotation plantation usually reaches an average height of more than 1.5 m in autumn after planting.

At the end of the second growing season, a dense canopy will be achieved on most sites if a prober weed control was executed in the first two years. The shade of the canopy will prevent competing vegetation to grow.


Poplar plantation after 5 months and perfect weed control

Managing and harvest a short rotation plantation

Management of energy wood plantations over several harvest & growth cycles (20-30 years)

Starting in spring of the 2nd year

5. Monitoring the plantation's development:

- Implement at least one mechanical weed control in the 2nd year of growth
- Avert heavy competing vegetation until a closed canopy has established
- Regularly control the plantation for pest infestation or other calamities

November till February

6. Harvest after 3 to 5 years:

- Harvest only during dormancy and good soil trafficability (e.g. soil frost)
- Harvest only when a high stock of wood has been reached (min. 25 – 30 bdt/ha) to ensure profitability
- Pay attention to the maximum average trunk diameter for harvesting technology
- Coordinate harvesting activities with neighbouring energy wood growers to optimise costs
- Harvesting options:
  - Utilisation of modified field chippers or mower-chippers for SRCs (direct wood chip production), or
  - Harvest of whole trees (e.g. motor manually or with forest technology) und separate chipping later - higher costs, but allows for natural drying of stems before chipping (hence, more suitable for mid term harvest cycles)

March till June

7. Managing after harvest:

- In case of medium or strong weed pressure a mechanical weed control in spring is recommended
- Regularly monitor plantation


Poplar monitoring


Poplar plantation prior to harvest


SRC harvest with field chipper

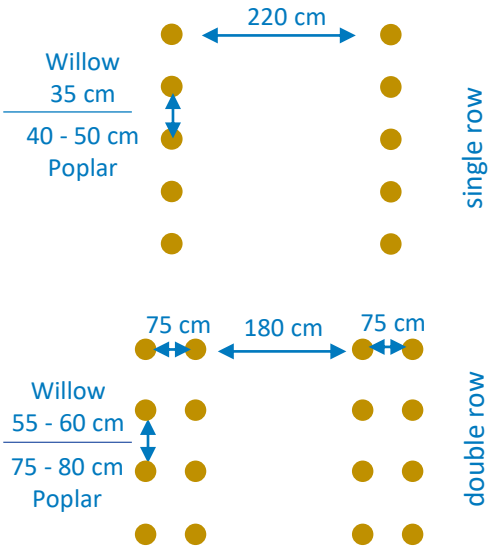

SRC wood chips


SRC regrowth after 1st harvest

- *The recommendations have been compiled to the best of our knowledge. All information is provided without warranty.*

Plantation layout – poplar and willow plantations

- Poplars are usually planted in single rows, while willows are also suitable for double rows.
- Lignovis generally recommends planting single-row for SRCs (facilitates weed control and allows for a wider range of harvesting technologies) with plant densities of about 10,000 pcs/ha for poplars and 13,500 pcs/ha for willows.
- The row distance should not be too far, so that the canopy could close quickly.
- However, the working width of the weed control and harvest technology should be taken into consideration. Lignovis recommends a row distance of 220 cm.
- When the utilisation of field chippers is intended, a headland of at least 10 m (including adjacent paths and passable areas if possible) should be established.



Short rotation coppice (SRC) plantations or agricultural energy wood is perfect:

- for a fast and economical production of large wood volumes within short harvesting intervals,
- for the supply of large green wood chip consumers (e.g. heating & combined heat and power plants),
- to supply smaller chip consumer after specific preconditioning (e.g. drying and screening),
- to diversify the income structure of agricultural farms and holdings.

Selection of tree varieties and planting material:

- For establishing a short rotation plantation only approved and high yielding poplar and willow breeds should be used.
- Tested and approved species are listed in national registers or on EU level (e.g. database FOREMATIS).
- Especially larger plantation projects should be diversified with several varieties to enhance resilience and create a multifaceted landscape structure.
- In general, 20 cm long unrooted cuttings are planted manually or by machines.
- Longer cuttings or rods are used should be planted on difficult or marginal sites.
- Please store delivered planting material at a cool and dark place, to ensure a sufficient rooting after planting.
- Tip: Check for public funding and support schemes in your country and region.

Legal classification of short rotation plantations:

- Short rotation plantations ("short rotation coppice") are classified as “permanent crops”. Hence, they are funded within the Basic Payment Scheme under the CAP Guidelines 2014-2020.
- Member states might further define suitable tree varieties and maximum harvest cycles as stated in Commission Regulation (EC) No 1120/2009.
- In most EU member states short rotation plantations are qualifying as Ecological Focus Area (EFS) to fulfill ‘Greening’ requirements.
- Please check for specific national regulations regarding approved varieties, harvesting cycles, possible application processes and flood & environmental protection before starting planting.

Lignovis GmbH

Lignovis GmbH develops and realizes energy wood projects with fast-growing tree species for farmers, investors and biomass users. By 2017, we have already planted around 20 million poplars and willows in Germany and 5 other EU countries for our customers.

We are producing high yielding planting material in our nurseries in Saxony and Brandenburg (Germany). For the professional establishment of short rotation plantations we are currently have 9 efficient planting machines under operation as well as special technology for weed control.

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Lignovis Webshop

In our webshop at www.lignoplant.com you can conveniently order poplar and willow planting material in advance and have them delivered directly to your home at the time of planting.