

Poplar cultivars characteristics

Assessment by Lignovis GmbH - 2023

Max 1 / Max 3 / Max 4 (P. maximowiczii x P. nigra)

Selection of natural hybrids originating in Japan.

Relevance

Max 1, 3 & 4 are considered as the standard and most planted varieties for short rotation plantations in Germany, especially for less fertile sites. Max 1 and Max 4 are genetically identical.

Characteristics

- High growth rate, right from the establishment year
- Robust variety, also suitable for dry locations
- Ideal for short rotations, relatively susceptible to wind damage (breaking and permanently bend tops)
- Not suitable for round wood production and forestry use
- Resistant to leaf rust (*Melampsora larici-populina*), relatively susceptible to defoliating insects

Hybrid 275 (NE42 and OP42) (P. maximowiczii x P. trichocarpa)

US breeding, originally for the pulp & paper industry

Relevance

Proven variety for forestry use, which is also cultivated in Scandinavia and the Baltic States in agricultural wood plantations. In Germany, Hybride 275 is considered as one of the established standard varieties for short-rotation poplar plantations, besides Max clones.

Characteristics

- Moderate growth in the year of establishment, good growth from the 2nd year onwards
- Susceptible to stress factors such as weed competition and drought in the early years
- Also suitable for relatively cold locations
- Well suited for short turnover but also for round wood production and use as pioneer forest species
- Resistant to leaf rust (*Melampsora larici-populina*)
- Relatively insensitive to defoliating insects

Matrix 11 / Matrix 24 / Matrix 49 (P. maximowiczii x P. trichocarpa)

Selection of the German NW-FVA for agricultural wood production.

Relevance

Varieties with above-average yields under good site conditions. Suitable for short and medium rotation periods.

Characteristics

- Rapid early development and long-term high yields on good sites
- Sensitivity to stressors and on weaker sites
- Suitable for short turnover and industrial wood production
- Resistant to leaf rust (*Melampsora larici-populina*)
- Relatively high susceptibility to bark diseases
- Relatively insensitive to defoliating insects
- Susceptible to late frosts due to early bud burst

Most of the poplar varieties offered by Lignovis GmbH are subject to protection by CPVRs and further propagation is strictly forbidden.

FastWOOD 1 / FastWOOD 2 (*P. maximowiczii* x *P. trichocarpa*)

Cultivars of the German NW-FVA (Northwest German Forest Research Institute). Approval 2016.

Relevance

New varieties with above-average yields under good site conditions. Suitable for short and medium rotation periods. Not for forestry use.

Characteristics

- Rapid early development and long-term high growth in good locations
- Particularly high yields on better sites, but increased sensitivity to stressors on weaker sites
- In Germany so far only approved for agricultural timber cultivation (not for forestry)
- Comparatively resistant to leaf rust (*Melampsora larici-populina*)
- Relatively insensitive to defoliating insects
- Susceptible to late frosts due to early bud burst

Bakan (*P. trichocarpa* x *P. maximowiczii*)

Male breeding by the Belgian INBO Institute (Research Institute for Nature and Forest). Breeding in 1970, variety registration in 2007. Growth period from late March/early April to late September.

Relevance

Extensively proven variety with clearly above-average yields for. Suitable for short, medium and long rotation times.

Characteristics

- Very fast early-stage development and very high growth rates from the 2nd year onwards
- Suitable for a wide range of locations
- Very straight and slender growth habit
- High quality of wood. Selected for round wood and peeled veneer production
- Approved in the EU for agricultural plantations and forest use
- Relatively insensitive to leaf-eating insects and insensitive to leaf rust (*Melampsora larici-populina*)
- Susceptible to late frosts due to early bud burst

Skado (*P. trichocarpa* x *P. maximowiczii*)

Female breed from the Belgian INBO Institute (Research Institute for Nature and Forest). Breeding in 1970, variety registration in 2007. Growth period from late March/early April to late September.

Relevance

Extensively tested variety with significantly above-average growth. Suitable for short, medium and long rotation times.

Characteristics

- Very rapid early development and enduring very high growth rates
- Very good development across a wide range of locations
- Slightly higher drought tolerance than Bakan
- Very straight growth form, denser crown and slightly thicker branches than Bakan
- High quality of wood. Selected for round wood and peeled veneer production
- Approved in the EU for agricultural plantations and forest use
- Relatively insensitive to leaf-eating insects and insensitive to leaf rust (*Melampsora larici-populina*)
- Susceptible to late frosts due to early bud burst

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Dender (*P. deltoides* x (*P. maximowiczii* x *P. trichocarpa*))

Male breeding by the Belgian INBO Institute (Research Institute for Nature and Forest). Breeding 1970, variety registration 2016. Growing season from early April to late September.

Relevance

A new variety that has been tested over the long period with growth rates that are well above average. Suitable for short, medium and long rotation times.

Characteristics

- Very rapid early development and long-term high growth rates
- Very good development across a wide range of locations, especially on fertile sites
- Very straight growth habit, good wind stability due to medium-sized leaves
- High quality of wood. Selected for round wood and peeled veneer production
- Approved in the EU for agricultural cultivation and forest use
- Insensitive to poplar diseases, very high tolerance to leaf rust (*Melampsora larici-populina*)
- Relatively insensitive to leaf-eating insects

Marke (*P. deltoides* x (*P. maximowiczii* x *P. trichocarpa*))

Female breed from the Belgian INBO Institute (Research Institute for Nature and Forest). Breeding 1970, variety registration 2016.

Relevance

A new variety that has been extensively tested with growth rates that are well above average. Suitable for short, medium and long rotation times.

Characteristics

- Very rapid early development and enduring very high growth rates
- Very good development across a wide range of site conditions
- Slightly higher drought tolerance than Dender
- Very straight growth habit, good wind stability due to medium-sized leaves
- High quality of wood. Selected for round wood and peeled veneer production
- Approved in the EU for agricultural cultivation and forest use
- Resistant to poplar diseases, high tolerance to leaf rust (*Melampsora larici-populina*)
- Relatively insensitive to leaf-eating insects

Vesten (*P. deltoides* x *P. nigra*)

Female breed from the Belgian INBO Institute (Research Institute for Nature and Forest). Breeding 1978, variety registration 2002. Growing period from mid/late April to late September.

Relevance

Extensively tested variety with above-average growth rates. Utilization in commercial poplar plantations in Southern Europe. Suitable for short, medium and long rotation times.

Characteristics

- Rapid early development and long-term high growth rates
- Good and reliable development across a wide range of locations
- Very good drought tolerance and resistance to heat stress
- Very straight growth habit, very good wind stability due to relatively small leaves
- Also suitable for round wood and peeled veneer production
- Relatively insensitive to defoliating insects, high tolerance to leaf rust
- Late bud burst, therefore, also suitable for locations with high risk of late frost events

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