FINNISH
BIRCH SEED
PRODUCTION
1970-2012

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Forest tree breeding started in Finland by the plus tree selection in 1947 when the Foundation for Forest Tree Breeding was founded.
Intensive birch breeding was initiated in a large scale in the early 1960’s with crossings and progeny testing.
At the beginning of the 1970’s the seed production of birch was revolutionized when the Foundation for Forest Tree Breeding developed the plastic greenhouse and the related growing technique.
The first birch seed orchards were established already at the beginning of the 1970’s.
All birch seed orchard seed is nowadays produced in plastic greenhouses.
ARTIFICIAL REGENERATION

- Afforestation of arable land, ha
- Birch seeding, ha
- Birch planting, million seedlings
The Finnish Birch Seed Orchards
ANNUAL SEED CROP

kg

Year


annual seed crop, kg
production area, ha
PRODUCTION IN 1970-2012
- 35 seed orchards
  (27 Betula pendula, 6 B. pubescens, 2 B. pendula var. carelica)
- 3300 kg seed
Amounts of seed used in nurseries 1991-2011

- Total
- B.pendula
- B.pubescens
The proportion of qualified B. pendula seed used in nurseries
Breeding generations

Betula pendula:
- 2. and 3. generation

Betula pubescens:
- 1. generation
GENETIC GAINS

(*Betula pendula*)

- Volume: +29%
- Relative tapering: -13%
- Relative branch diameter: -10%
FLOWER INDUCTION

- Planting density
- Light
- CO$_2$
- Heat
- Micropropagated plants
FLOWER INDUCTION

- Planting density: 3m x 3,75m
- Light
- CO₂
- Heat
- Micropropagated plants
FLOWER INDUCTION

- Planting density: 3m x 3,75m
- Light: filter cloth + lime stone
- CO$_2$
- Heat
- Micropropagated plants
FLOWER INDUCTION

- Planting density: 3m x 3,75-4,00m
- Light: filter cloth + lime stone
- CO$_2$: propane burning 15.5.-30.6. at 04:00-07:00 max. 1000 ppm
- Heat
- Micropropagated plants
Photographers

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