



SEED ORCHARD CONFERENCE

Riga 5.4.2013

FINNISH BIRCH SEED PRODUCTION 1970-2012

Sirkku Pöykkö

METLA

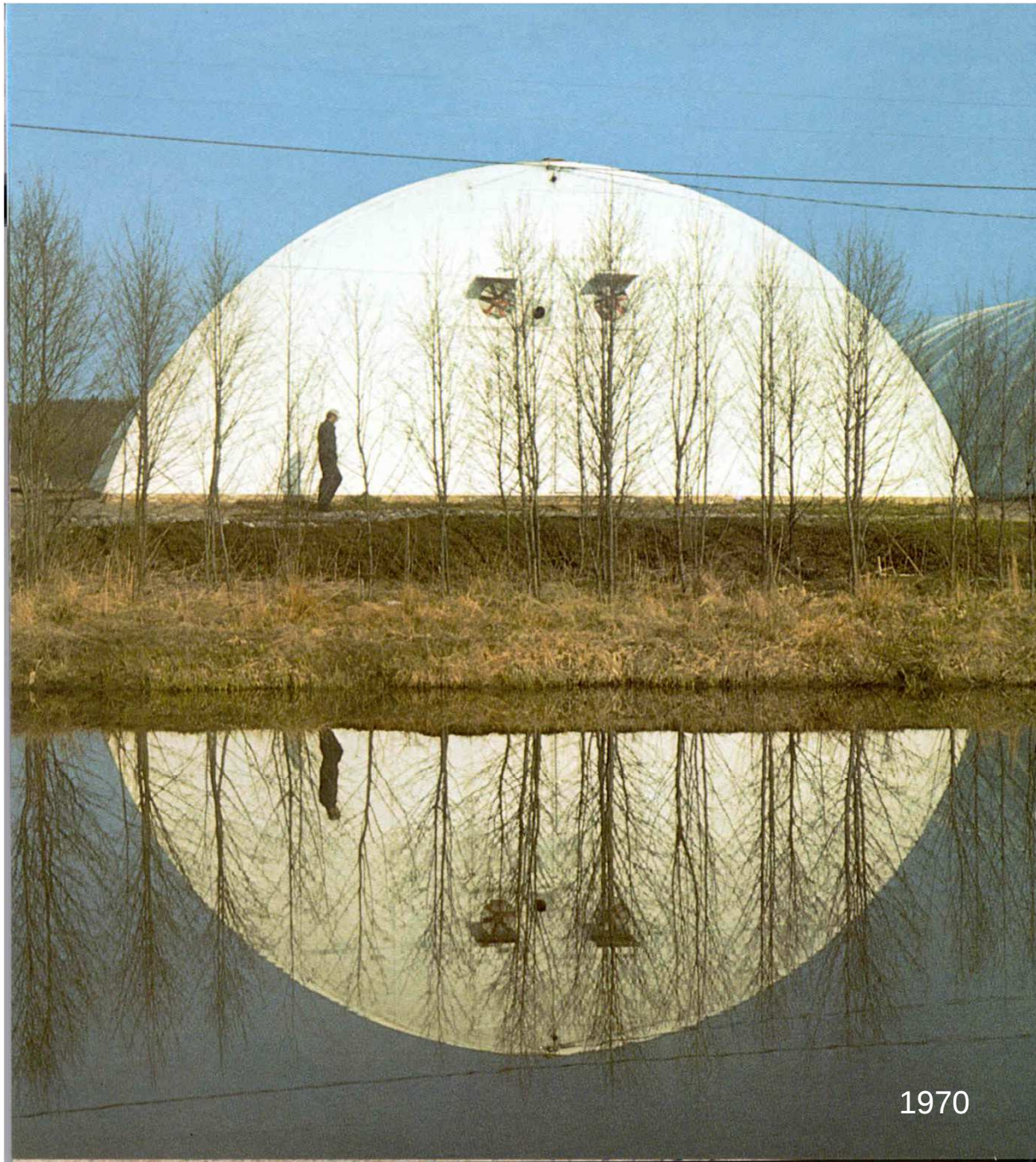
Metsäntutkimuslaitos Skogsforskningsinstitutet Finnish Forest Research Institute www.metla.fi



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.



2007



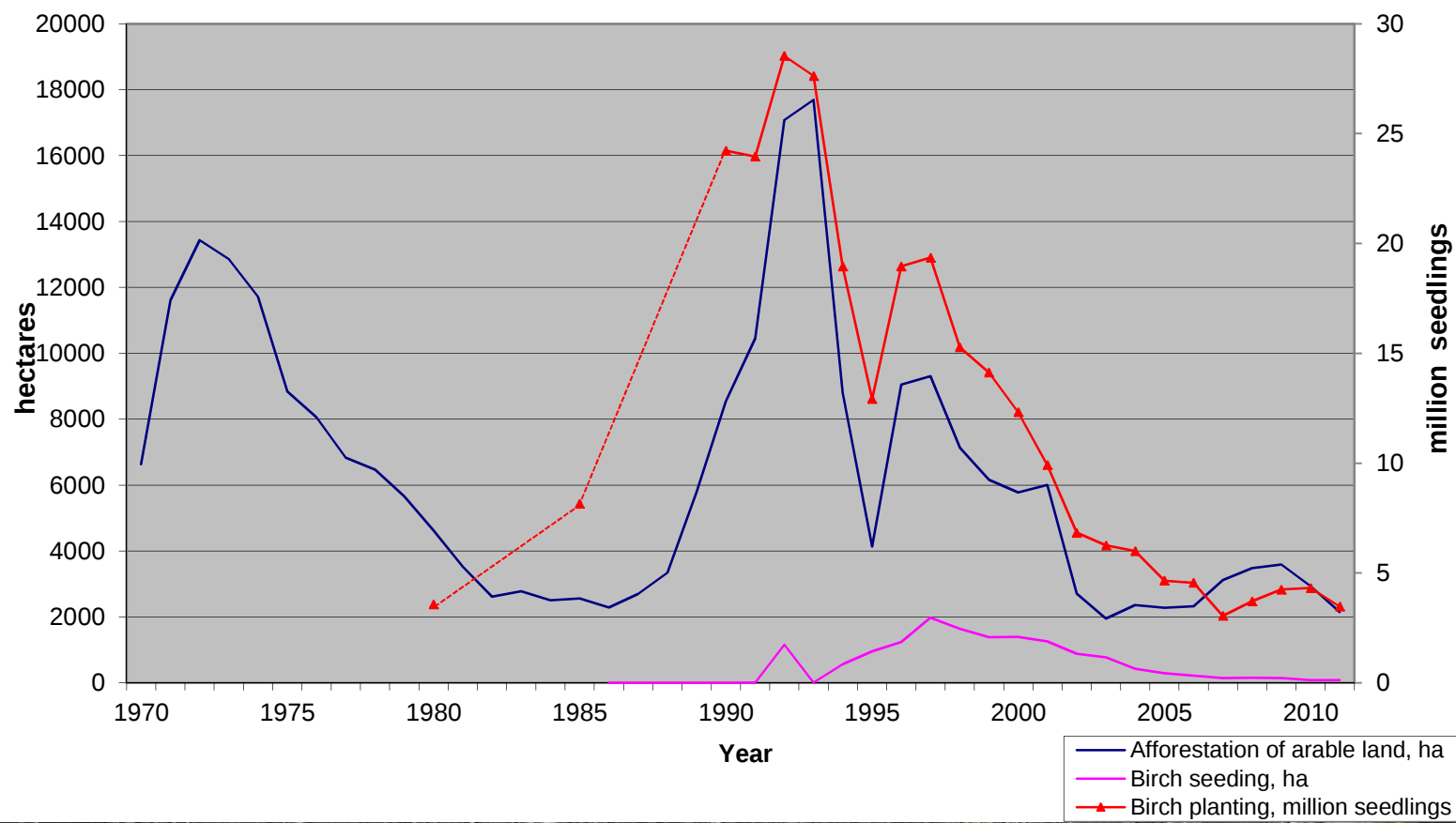
The first birch seed orchards were established already at the beginning of the 1970's.

1971

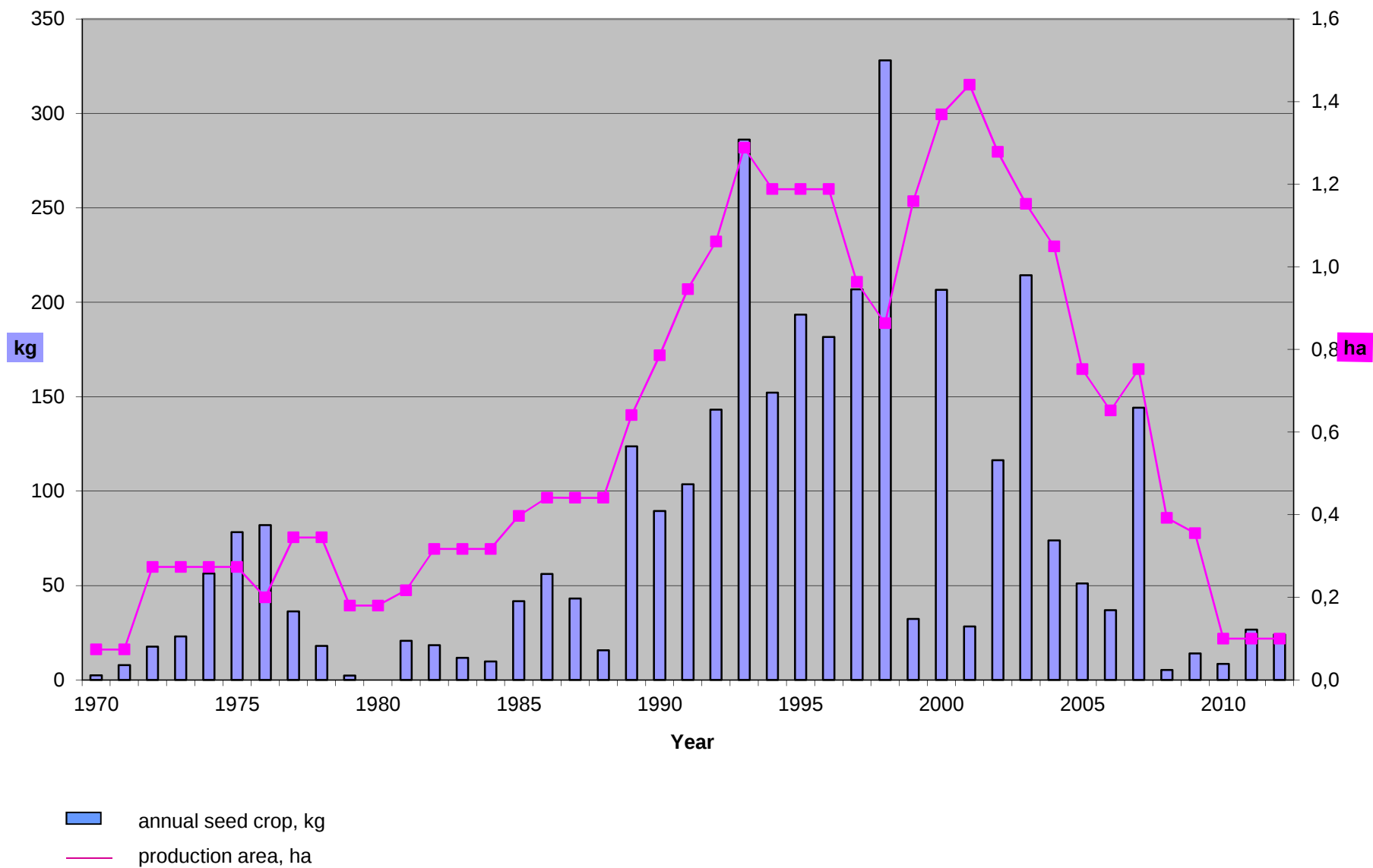


All birch seed orchard seed is nowadays produced in plastic greenhouses.

ARTIFICIAL REGENERATION



The Finnish Birch Seed Orchards ANNUAL SEED CROP



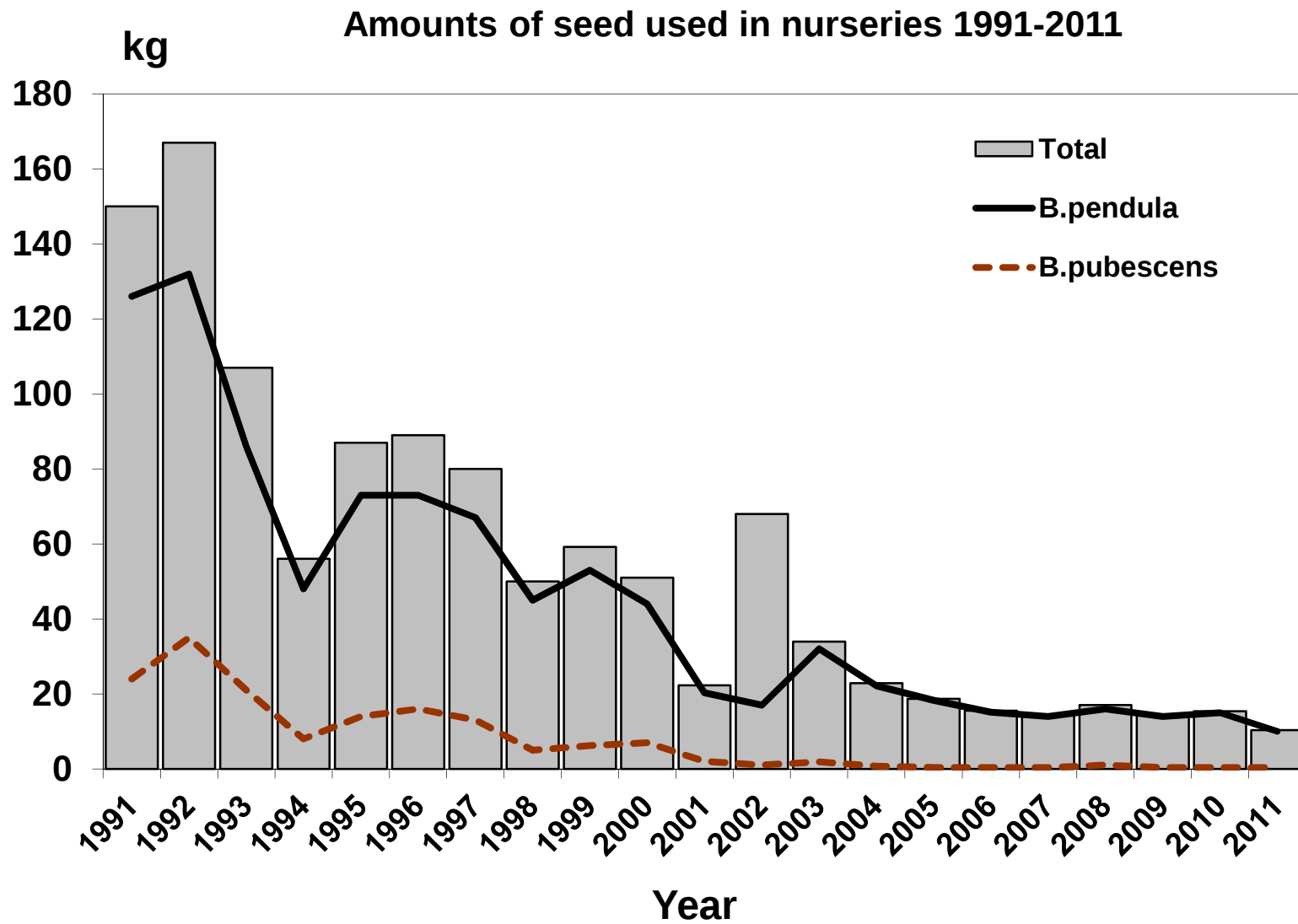


PRODUCTION IN 1970-2012

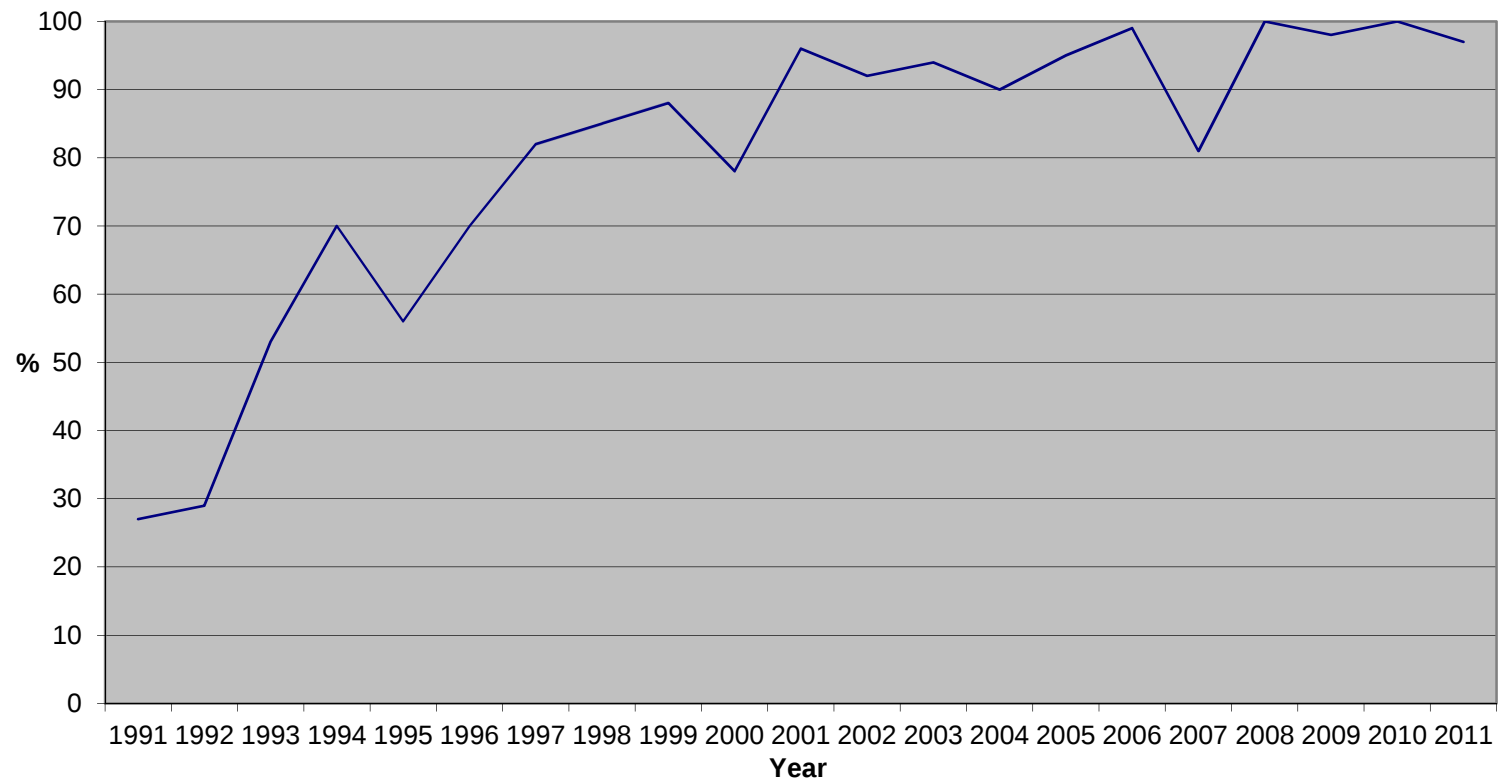
- 35 seed orchards

(27 *Betula pendula*, 6 *B. pubescens*, 2 *B. pendula* var. *carelica*)

- 3300 kg seed



The proportion of qualified *B. pendula* seed used in nurseries

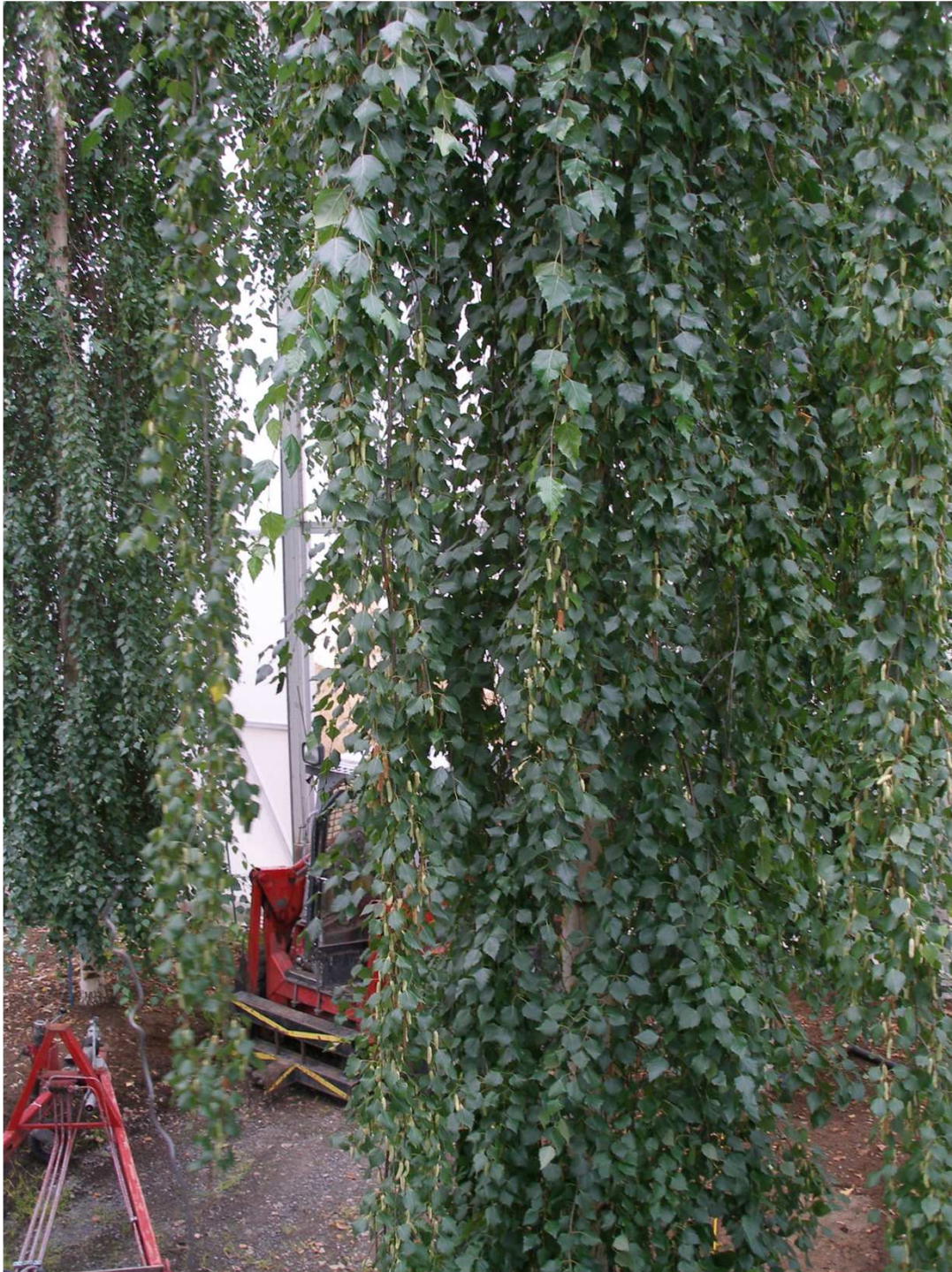


Breeding generations



Betula pendula:
- 2. and 3. generation

Betula pubescens:
- 1. generation



GENETIC GAINS

(Betula pendula)

Volume	+29%
Relative tapering	-13%
Relative branch diameter	-10%







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FLOWER INDUCTION

- Planting density
- Light
- CO₂
- 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
- CO₂
- Heat
- Micropropagated plants

FLOWER INDUCTION

- Planting density: 3m x 3,75-4,00m
- Light: filter cloth + lime stone
- CO₂: propane burning 15.5.-30.6. at 04:00-07:00
max. 1000 ppm
- Heat
- Micropropagated plants







Photographers

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