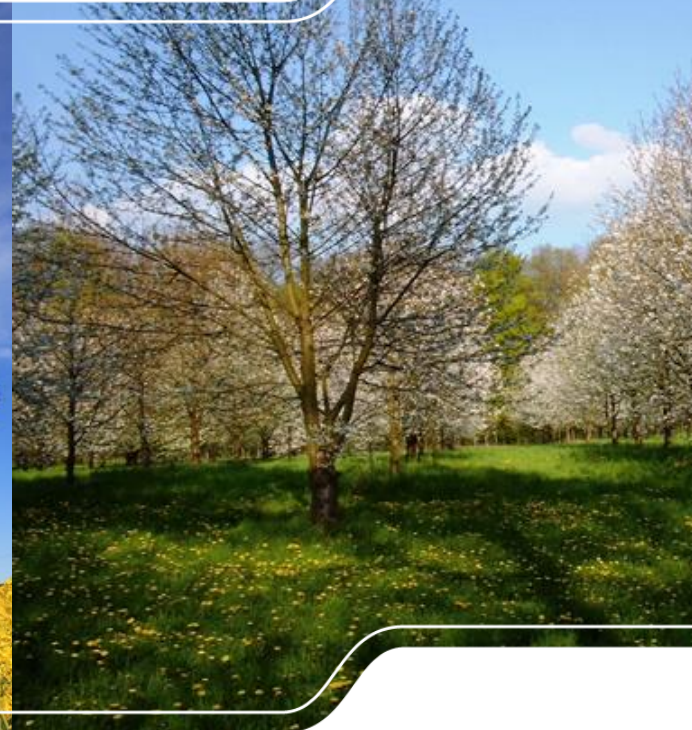


# Establishment of seed orchards for admixed and rare deciduous tree species

– a field of future cooperation?

STAATSBETRIEB  
SACHSENFORST



- Purpose and objectives of seed orchards
- State of condition of seed orchards already approved and still in establishment
- Possibilities and challenges for cooperation



# Purpose and objectives

Planting of trees exclusively für the purpose of early, substantial and sustainable seed production

## Conservation-seed orchard

Conservation of genetic resources of woody species



## Production-seed orchard

Efficient production of genetically high valuable seeds related to amount and quality

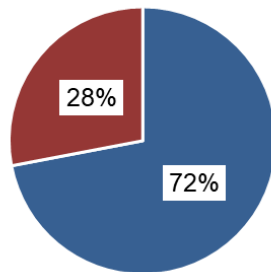


## ■ Preferences

- Seed orchard-programmes 1950/60ies years
- Coping with damages by air pollution 1980/90ies years
- Species conseration programmes 2000ies until today

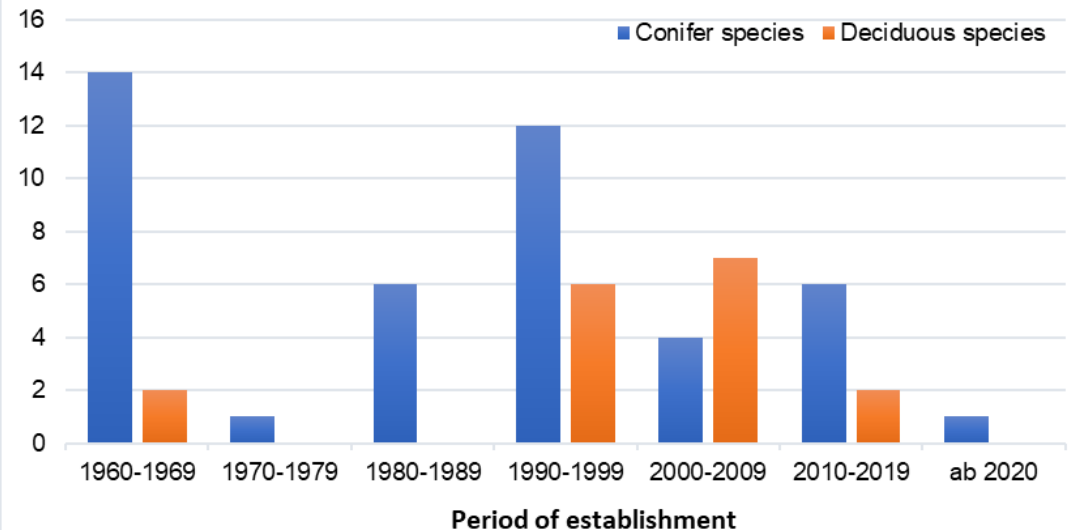
- 61 seed orchards, 19 tree species, Baumarten, age 2 until 64 years

Distribution of seed orchards according to groups of tree species



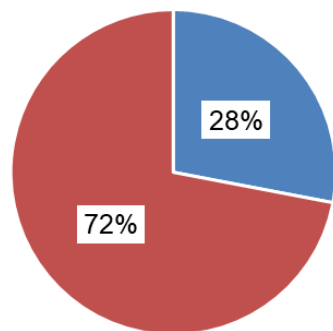
■ Conifer species ■ Deciduous species

Establishment periods of conifer and deciduous tree species seed orchards in Saxony



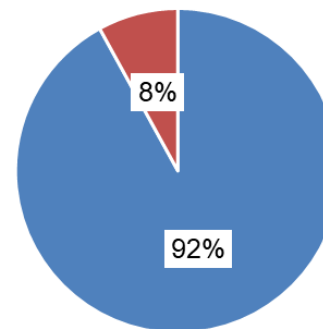
## Composition and condition of seed orchards

Objectives of seed orchards



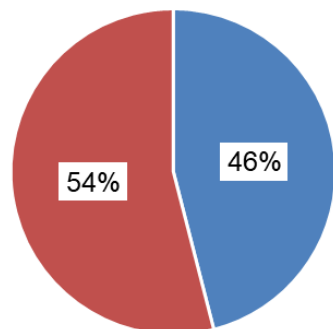
■ Conservation ■ Production

Legal status of seed orchards



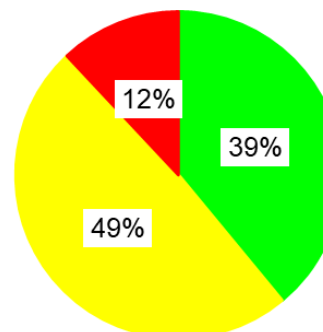
■ Regulation-species ■ Non-regulation-species

Status of approval (only regulation-species)



■ Approved ■ Not-approved

Condition of seed orchards



■ Good ■ Tending urgent ■ To be given up

## ■ Reasons for composition and condition

- Economical importance of conifer species
- Change of focus since the 1990ies years
  - Nature oriented silviculture with extended production times
  - Natural regeneration where ever possible, artificial regeneration where necessary
  - Confidence in the performance of the market with forest reproductive material
- Decrease of labour force concerning all levels
- Changed setting of priorities

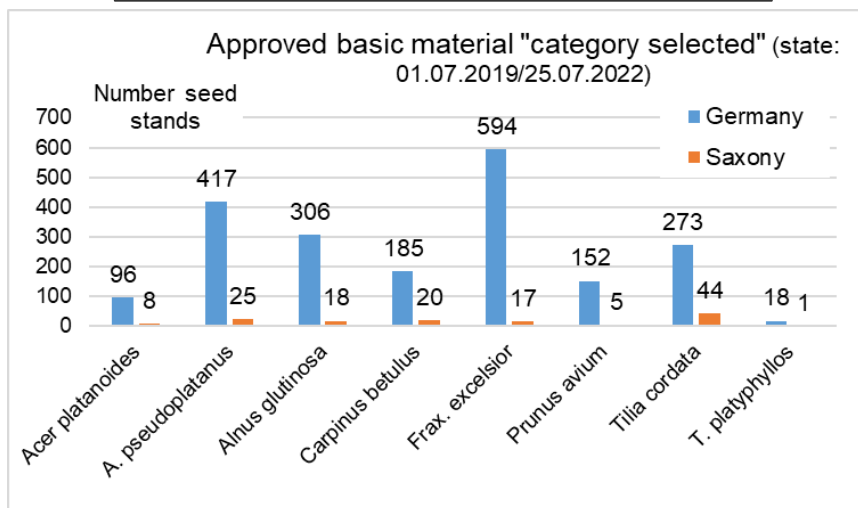
## ■ Reasons for giving up seed orchards

- Suitability of site as well as pest and diseases
- Overaging in combination with insufficient care
- Conflicts on how to use a certain area

# Challenges

- Increased demand for admixed deciduous species versus existing basic material
- Use of seed stands increasingly limited
- Risks of climate change as well as pest and diseases

## Admixed tree species



## Rare tree species

Species	Red list	Species	Red list
	SN		SN
Acer campestre		Sorbus torminalis	1
Betula species (2)		Ulmus glabra	3
Malus/Pyrus species (2)	3/	Ulmus laevis	
Populus species (2)	1/	Ulmus minor	3
Salix species (2)		Juniperus/Taxus	2/1
Sorbus aucuparia		Pinus mugo	(V)

# Possibilities for cooperation

- Programme for the establishment of seed orchards
- Proposal: Acer species, Carpinus betulus, Tilia and Oak species
  
- Project “Seed orchards for forest conversion“
  - Selection, propagation and securing of suitable plus trees
  - Design, selection of site, establishment
  - Duration min. 4 years to start the process

Species	Number of SO	Size	Number of clones (objective)
Acer pseudoplatanus	3	6 ha	300
Acer platanoides	2	4 ha	200
Carpinus betulus	2	4 ha	200
Tilia platyphyllos	2	4 ha	200
Tilia cordata	2	4 ha	200
Quercus petraea	3	6 ha	300
Quercus robur	3	6 ha	300
Quercus rubra	1	2 ha	100



- Use of existing clone collections as source for the establishment of seed orchards (exchange of information and material)
- Selection of plus trees using common standards, their genetic characterization and propagation by grafting (cooperation, division of labour)
- Establishment of common seed orchards (cooperation)
  - Long lasting process from beginning until delivery of first seeds produced
  - Long lasting commitment related to labour force, planting sites, capacities for establishment, caring and tending of seed orchards



Thank you very much for your attention