

# FGRT / FTT sycamore seed orchards and progeny trials-

**Sycamore group established 18 years ago (2004)**

## *Overall Objective*

- “ to improve the vigour and quality of the basic planting stocks”

## *Specific objectives:*

- – to facilitate the development  
and  
utilisation of seeds of improved genetic quality by  
nurseries for forestry deployment

# FGRT / FTT sycamore seed orchards and progeny trials-

## Tasks achieved from 2004

- ✓ Identified superior Plus trees– UK & Ireland
  - ✓ Propagated the Plus trees (180)
  - ✓ Established a conservation collection
  - ✓ Established 6 seed producing orchards
- 
- **Test the material from the Seed Orchards**

# Sycamore potential as a crop



Bolton Estate, UK

- Age 60
- Thinned 5 times
- Pruned
- Yield Class: 10-12
- Mean dbh: 60 cm
- Value
  - approx 47,000 Euro/ha

*Sycamore is an important substitute species for ash on suitable sites*



# Selected Plus trees



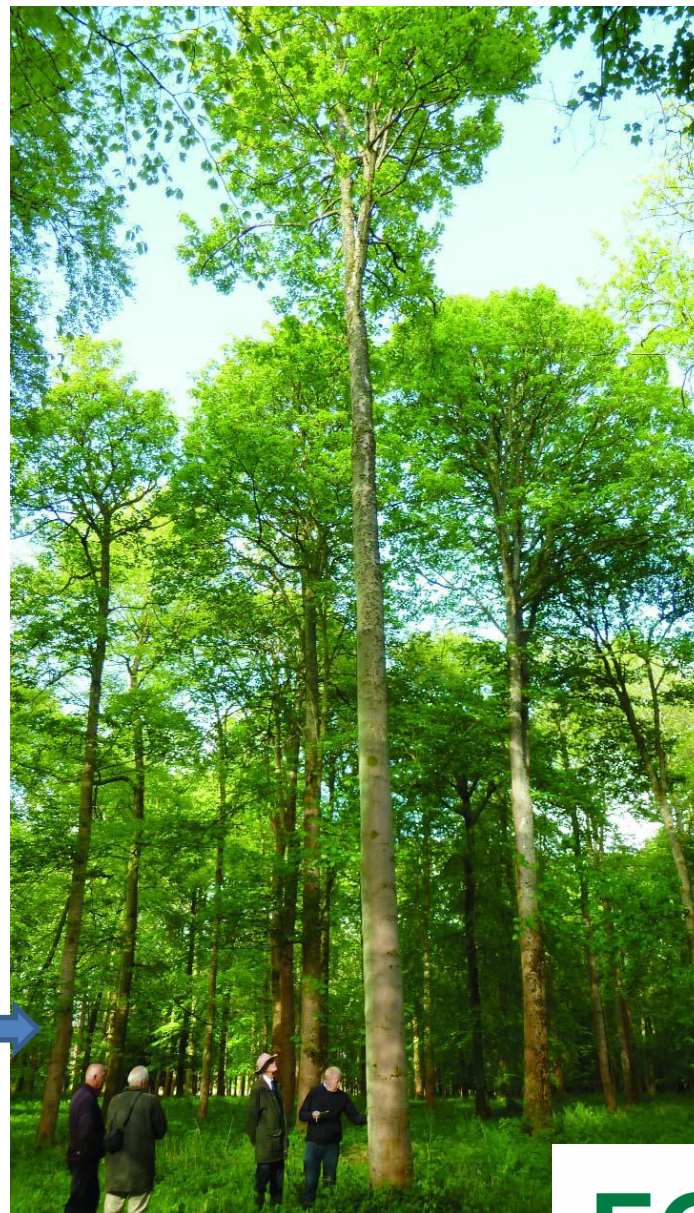
N. Ireland

## Note

- no forks
- straight stem
- min 8-10m.



Cirencester  
Britain



## Characteristics of Irish Plus trees of Sycamore:

| <b>Site</b>                                    | <b>Planted<br/>(yrs)</b> | <b>DBH /<br/>cm</b> | <b>Tree<br/>Height<br/>/ m</b> | <b>Timber height<br/>m</b> |
|--|--------------------------|---------------------|--------------------------------|----------------------------|
| <b><i>Rossmore<br/>Monaghan</i></b>            | <b>1925<br/>(82)</b>     | <b>72.7</b>         | <b>33.0m</b>                   | <b>12.0</b>                |
| <b><i>Castlemorris<br/>Kilkenny</i></b>        | <b>1936<br/>(71)</b>     | <b>43.6</b>         | <b>29.5</b>                    | <b>14.5<br/>YC10-12</b>    |
| <b><i>Headford,<br/>Virginia<br/>Cavan</i></b> | <b>1938<br/>(69)</b>     | <b>42.8</b>         | <b>22.8 m</b>                  | <b>8.7</b>                 |
| <b><i>Grangecrag<br/>Kilkenny</i></b>          | <b>1944<br/>(63)</b>     | <b>31.5</b>         | <b>21.25</b>                   | <b>13.75</b>               |
| <b><i>Kilsheelan<br/>Tipp/ W'ford</i></b>      | <b>1956<br/>(51)</b>     | <b>43.6</b>         | <b>31.0m</b>                   | <b>16.4</b>                |



# Grafted Sycamores at Teagasc for conservation collections & seed orchards



4 weeks after grafting  
multiple copies of each Plus tree



Grafted sycamore  
at the end of the year



# Conservation collection of all Irish & UK Plus trees at Teagasc



**Provided** --- shoot material to generate plants for Seed Orchards  
--- seeds for testing (1<sup>st</sup> progeny 2016, testing 35 families,  
3 controls. Antrim)

# Established Seed orchards of sycamore

| Location of seed orchards | Country      | Year established | No. Plus tree genotypes in each seed orchards |
|---------------------------|--------------|------------------|---|
| Coillte                   | Rep. Ireland | 2003             | 45  |
| Maelor                    | England      | 2009             | 107   |
| Loughgall                 | N. Ireland   | 2012             | <b>**182</b>                                  |
| Forestart                 | England      | 2012             | 145   |
| Galloway                  | Scotland     | 2014             | <b>**160</b>                                  |
| None- so Hardy            | Rep. Ireland | 2016             | <b>**135</b>                                  |

**\*\* 4 ramets of each Plus tree in these orchards**



## Sycamore Seed Orchard-- None So Hardy



2016



**Sycamore  
seed  
orchard  
None So  
Hardy**

**2021**



# Genetic variation based on seed phenotype



Sample of seed from  
16 Plus trees

- Note the diversity  
in seed size & shape



## Sycamore seed orchards, 1<sup>st</sup> Generation

- ‘Qualified’ status for marketing
- Great genetic variation --- up to 180 genotypes
- Management involves recording flowering and seed production per genotype
- **Can it be improved upon ? ---- Test** the progeny

# Testing the progeny from Seed Orchards

## Progeny Test underway:

- Seed collected 2021 None So Hardy, Forestart, Maelor, Loughgall, Stratified

## 96 progeny

- 2 Irish Controls, 1 Belgian, 3 Danish
- Plants currently growing here and in UK
- Planting 2023 in 3 sites UK , 1 Ireland (Loughgall)

## Results from progeny tests:

- Seed orchards move to 'Tested' ?
- Rogueing of Seed Orchards
- 2<sup>nd</sup> generation Seed orchards ?

## Thanks to many Partners in Sycamore improvement :

- Michael Carey consultant ; Andrew Leslie (Newton Rigg College)
- Gerry Douglas , & John McNamara, Teagasc
- Rodrigo Olave, & Jim Mc Adam and Linda Walsh, AFBI
- Andrew Clark, Forestry consultant ; Gavin Munro , Timber expert
- Keith Mills & Iain Garrett, Southern Forestry
- David Boshier & Peter Savill, Univ. Oxford
- Charles Dutton, Squirrel expert
- Jo Clark, Earth Trust; Steve Garrett, forester
- David Norris & Alan Harrison, Forestry Commission
- Rob Sykes, Steve Lee & Jason Hubert, Forest Research
- Sam Firkins Forestart, Hannah Taylor formerly Maelor Rob Lee, Forestart Alice Snowden Cheviot trees
- John Kavanagh, None-so Hardy nursery
- Monica Murphy & Pat Doody, Coillte John Fennessy
- COFORD, DAFM, Forestry Commission, Eugene Hendrick FGRT

Currently active





**Thank you  
for  
your attention**

