

Cultivation of Irish Yew

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Taxus Species

- *Taxus baccata*- English yew
 - *Taxus baccata* var. *fastigiata*- Irish yew
- *Taxus brevifolia*- Pacific or Western yew
- *Taxus canadensis*- Canadian yew
- *Taxus celebica*- Chinese yew
- *Taxus cuspidata*- Japanese yew
- *Taxus floridana*
- *Taxus globosa*
- *T. wallichiana*





Taxus site requirements

- Tolerates a wide range of soils
- Tolerates clipping and shaping
- Tolerate shade
- Tolerates exposure
- Tolerates damp soils, but not wet soils
- Can act as a pioneer species

Genetic variation

- More than 38 varieties of *T. baccata*
- Variation in:
 - Aril colour
 - Growth habit
 - Prostrate
 - fastigiate
 - Foliage colour
 - Yellow or golden
 - variagatated





Uses

- Too slow growing to be a commercial forestry species (10 to 25 cm/year)
- Strong wood- long bows
- Hedging and topiary
- Production of anti-cancer drug “Taxol”

Propagation by seed

- Begins flowering and seed production at 30 to 35 years old.
- Seed crop produced most years.
- Most seed removed by birds.
- Possible dispersion by squirrels.
- Seed viability usually 50 to 70%
- Seed can be successfully stored for several years if kept damp and cool.

John Evelyn

“This English yew is easily produced by seeds, washed and cleansed from their mucilage, then buried and kept in sand a little moist in December, and so kept in some vessel in the house all winter and in some cool shady place abroad all the summer. Sow them the spring after. It will commonly be the second winter before they peep. They are worth of our patience.”







Seed Dormancy

- Seed rarely germinates in the first year.
- Typically germinates in second or third year (remains viable for up to 4 years).
- Passage through digestive system of birds increases germination.
- Seed coat not impermeable to water.
- Warm moist conditions (15-20 °C for 90 to 200 days) followed by moist chilling 2-5 °C for 60 to 120 days) suggests immature embryo.

Seed Germination

- Best at 13 to 16 °C.
- Germination not stimulated by light.
- Seeds from wetter conditions larger than from drier conditions.
- No significant relationship between seed weight and germination rate.
- Seedling growth slow
 - End of first year 2 to 8 cm high
 - Subsequent years 2.5 cm annually.

Propagation by Rooted Cuttings

- Unlike seed propagation, propagation by rooted cuttings reproduce the original individual which is important for horticultural varieties.
- Zelenka Nurseries in Michigan produces about 2 million rooted cuttings per year.
- Rooted cuttings will be ready to be planted in the field sooner than seedlings.

Previous Experience with Propagation of Yew by Rooted Cuttings

- Production of “Taxol” in *Taxus baccata*.
- Identify clones with:
 - Rapid growth rate
 - High Taxol content
- Establish field trials to document biomass production rates.
- Investigate cell culture as a source of material.













Total Number of Yew Rooted Cuttings Planted Per Site

Site	Planted Spring '09	To be Planted Autumn '09	Total Planted
Clonbur	2,000	1,000	3,000
Attyslany	2,000	500	2,500
Currachase	2,400	800	3,200
Cahir Park	3,300	0	3,300
Castletaylor	4,200	200	4,400
Total	13,900	2,500	16,400

