

SEED ORCHARD

DOUGLAS FIR FRANCE 1



SPECIES

Pseudotsuga menziesii
(Mirb.) Franco

ORCHARD CODE AND NAME

PME-VG-004 FRANCE 1-VG

CATEGORY

Qualified

BREEDER

INRA (Institut National de la
Recherche Agronomique -
Orléans - France)

CHARACTERISTICS OF THE ORCHARD

- Orchard of clones (cuttings)
- Year of planting : 1989/90
- Place of planting : Calviac (Lot - France)
- Altitude of planting : 700 meters
- Surface area : 6,5 hectares
- Number of clones : 110 (in 2006)
- Origin of clones : French plantations in the eastern Massif Central
- Number of effective clones * : 57
- Number of trees : 746
- Start of production : 2006
- Method of pollination : Free

*This indicator of genetic diversity takes cognizance of the number of representatives of different clones and, where appropriate, between genetically related clones

CRITERIA AND SELECTION PROCESS

The base material consisted of a representative sample from selected French plantations. These mature plantations have already been subjected to the pressure of natural selection and so represent a guarantee of good adaptation to French climatic conditions. The 23 sampled plantations are located on the eastern edge of the Massif Central, at an altitude ranging from between 350 and 750 metres (detailed list at end of sheet).

SUMMARY

It is one of the three seed orchards from French plantations in the eastern Massif Central. The selection was made in the Creuse region (altitude 720 m) and the Haute-Vienne (altitude 450 m) based on the criteria of growth, date of bud burst and shape, in particular the angle of insertion of the branches. Potentially, a vigorous product, with a bud burst period comparable to that of the Darrington orchard.



SEED GENERATION

SEED ORCHARD DOUGLAS FIR FRANCE 1

ADVICE FOR CULTIVATION

For cultivation in France, France 1 is recommended for all areas that are appropriate for Douglas fir (mid-mountain, good water supply). It's also recommended for Belgium (Walloon region).

CRITERIA AND SELECTION PROCESS

Seeds were collected from approximately 150 trees from these 23 plantations. This facilitated the setting up of four progeny tests. Two of these tests, involving 143 progenies, were planted, one at an altitude of 450 metres, at Peyrat-le-Chateau in the Haute-Vienne, the other at 720 metres, in Faux-la-Montagne in the Creuse region. After ten years, INRA selected the 48 best examples from amongst the 143 progenies, as well as the 139 best individual examples from within these 48 progenies. The selection criteria were vigour (total height), lateness of bud burst and shape (straightness of trunk, open angle of insertion of the branches, no forking, no growth in August). Cuttings were taken from the 139 selected trees to establish the France 1 seed orchard at Calviac in the Lot region.

EVALUATION

Compared to the population at the beginning of the tests at Peyrat and Faux-la-Montagne (progeny from French plantations), the expected genetic gain is estimated at between + 8% and 12% in respect of total height, that is, an expected gain of about 20% on volume. The first significant harvest of seeds took place in 2006. It facilitated the setting up of a number of evaluation tests in 2009 and 2010 at different altitudes and under various climatic conditions, in particular in marginal conditions for Douglas fir (Haute-Vienne, Creuse, Loiret, Puy de Dome, Aude, Lot, Cantal ...). The first results (Spring 2010) demonstrate that bud burst in France 1 is as late as that of the Darrington orchard.

DETAILS OF THE 23 SELECTED FRENCH PLANTATIONS

PLANTATION	DEPARTMENT	LOCAL AUTHORITY	ALTITUDE (M)	LAT. NORTH	LONG. EAST
En Argaud	Saône et Loire	Matour	550	46° 18'	4° 30'
Bois Chicard	Saône et Loire	Ozolles	440	46° 20'	4° 22'
Bois des Cusses	Saône et Loire	Ozolles	445	46° 21'	4° 21'
Bois du Moulin	Saône et Loire	Verosvres	400	46° 20'	4° 24'
Bois Rond	Saône et Loire	Chatenay	525	46° 17'	4° 22'
Bruyère de Pommey	Saône et Loire	Ozolles	410	46° 21'	4° 23'
Au Charnay	Saône et Loire	Matour	560	46° 18'	4° 25'
Chassagne	Rhône	St Igny de Vers	550	46° 15'	4° 24'
Chevenatte	Rhône	St Bonnet des B.	580	46° 14'	4° 28'
Les Communes	Saône et Loire	Chatenay	470	46° 17'	4° 21'
Etang Bonnin	Saône et Loire	Ozolles	363	46° 21'	4° 21'
La Garenne	Saône et Loire	Gibles	430	46° 20'	4° 22'
Les Genévriers	Saône et Loire	Trambly			
La Gravière	Saône et Loire	St Racho	500	46° 15'	4° 22'
Marcon	Saône et Loire	Dompierre	400	46° 21'	4° 29'
Moussan	Herault	Verreries de Moussan	750	46° 26'	4° 42'
La Neiray	Rhône	Claveisolles	580	46° 17'	4° 28'
Le Perron Nord	Loire	Belleroche	720	46° 09'	4° 25'
La Perrière	Rhône	Aigueperse	490	46° 16'	4° 26'
Aux Pralles	Saône et Loire	Matour	530	46° 18'	4° 30'
En Seignerion	Saône et Loire	Trivy	350	46° 22'	4° 29'
Les Serrets	Rhône	Aigueperse	520	46° 16'	4° 24'
Villars	Saône et Loire	Montmelard	450	46° 21'	4° 24'



CONTACT VILMORIN
T. +33 (0)2 41 79 41 66

vilmorin-tree-seeds.com
vilmorin-semences-arbres.com
vilmorin-semillas-de-arboles.com

