CHESTNUT GROWING IN CUNEO

WHERE'S CUNEO?

Mountains

The territory is made up of :

- 50.8% mountains (about half being the lower mountains)
- Lowest place is 650 feet, highest mountain 13,000 ft.
- 26.6% of hills
- 22.6% of high plateaus

CLIMATE

- Cuneo has a temperate sub-continental climate, with cold winters, hot and muggy summers. However, it is located at over 500 meters (1650 ft) above sea level, which contributes to making summers more bearable, thanks to the ventilation: the hottest month, July, has an average temperature of +21.6 ° C. The coldest, January, has an average of +2.6 ° C. The average annual temperature is around 12.3 ° C .
- Winter cold can reach -15°C/ 5° F
- Summer heat can reach +35°C / 95°F
- Annual rainfall amounts to an average of about 1000 millimeters (40 inches), distributed over 90 days. The rainfall regime shows 2 maximums (one, main, in spring; one, secondary, in autumn) and 2 minimums (summer and winter).
- The driest month is July (44 mm rainfall), as Cuneo is located in the south of Piedmont, it is less exposed to the tails of summer Atlantic perturbations, harbingers of thunderstorms.
- Snowfalls are frequent: Cuneo is the snowiest provincial capital in Italy.

The province of Cuneo is characterized by these crops:

- corn: 28,3% of total farms that is 15,9% total cultivated surface (livestock farms)
- Permanent lawns: 37,7% of total farms, 14,3% t.c.s. (livestock farms)
- forest: 42,5% of total farms, 12% t.c.s.
- wheat: 20,7% of total farms, 6,3% t.c.s.
- grapevine: 26,5% of total farms, 5,1% t.c.s.
- filbert: 20% of total farms, 3,5% t.c.s.
- *chestnut: 13,6% of total farms, 2% t.c.s.*

chestnut surfaces in Cuneo area compared to the national figure

- 3200 farms in Cuneo (almost all are family farms)

  30,000 nationwide
- 6.000 ha in Cuneo / 15,000 acres

  52,000 ha/ 130,000 acres nationwide
- 2% of total cultivated surfaces in Cuneo area
- 12% of total chestnut surface in Italy
- Actual nut production in Cuneo:
- 2,000 metric t = 2,200 US t = 4,400,000 lb

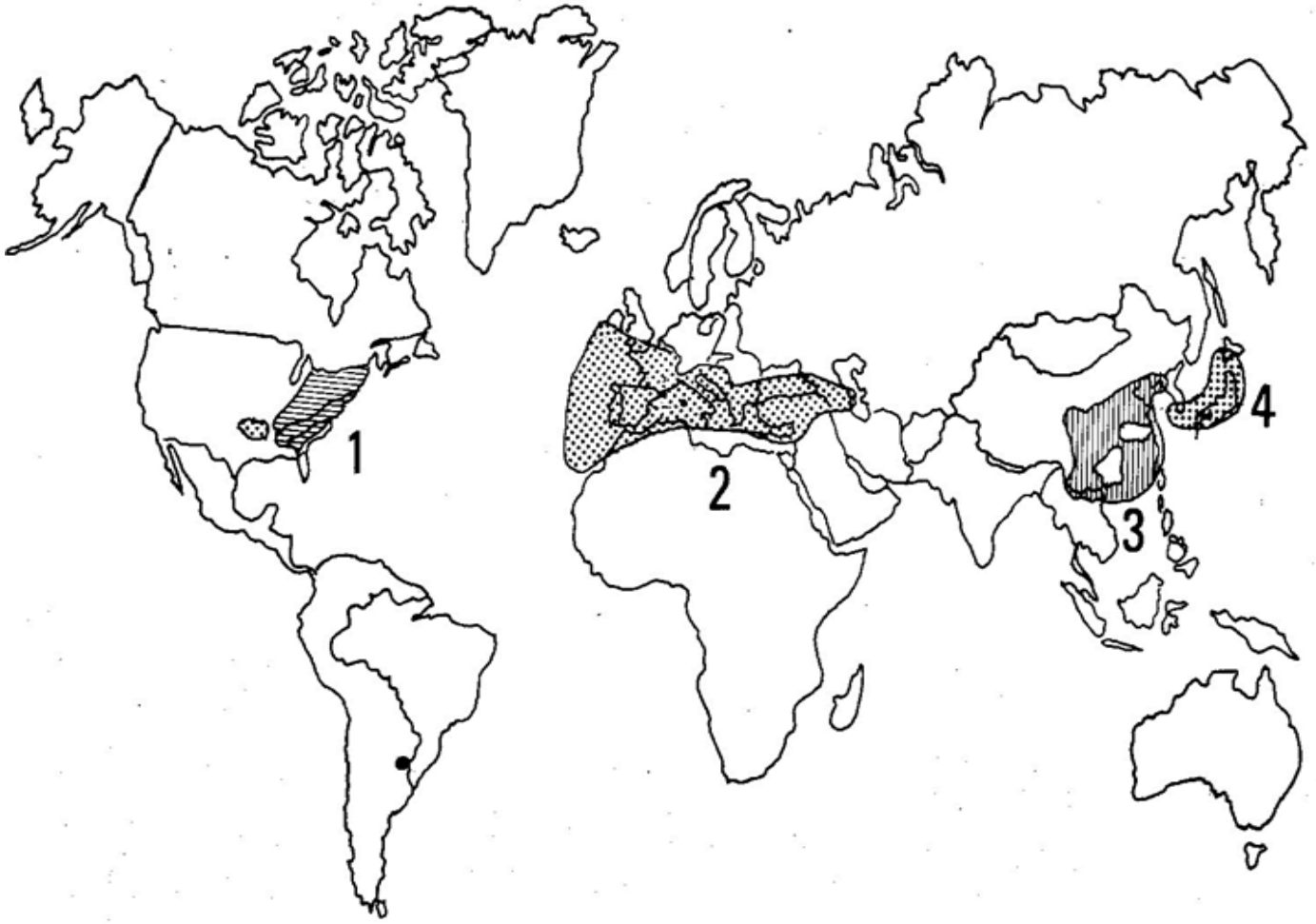
ITALY'S NUT EXPORTATION

	tons	%	value euro/kg
• Germany	3.084	+25.64	4,37
• Switzerland	1.995	+ 5.04	4.95
• Austria	1.640	- 8,40	5,04
• United States	1.422	+53.90	4.72
• France	2.556	+176.38	1.98
• United Kingdom	625	-14.81	3.62
• Canada	487	+18.35	4.43
• World	12.124	+27,40	3.99

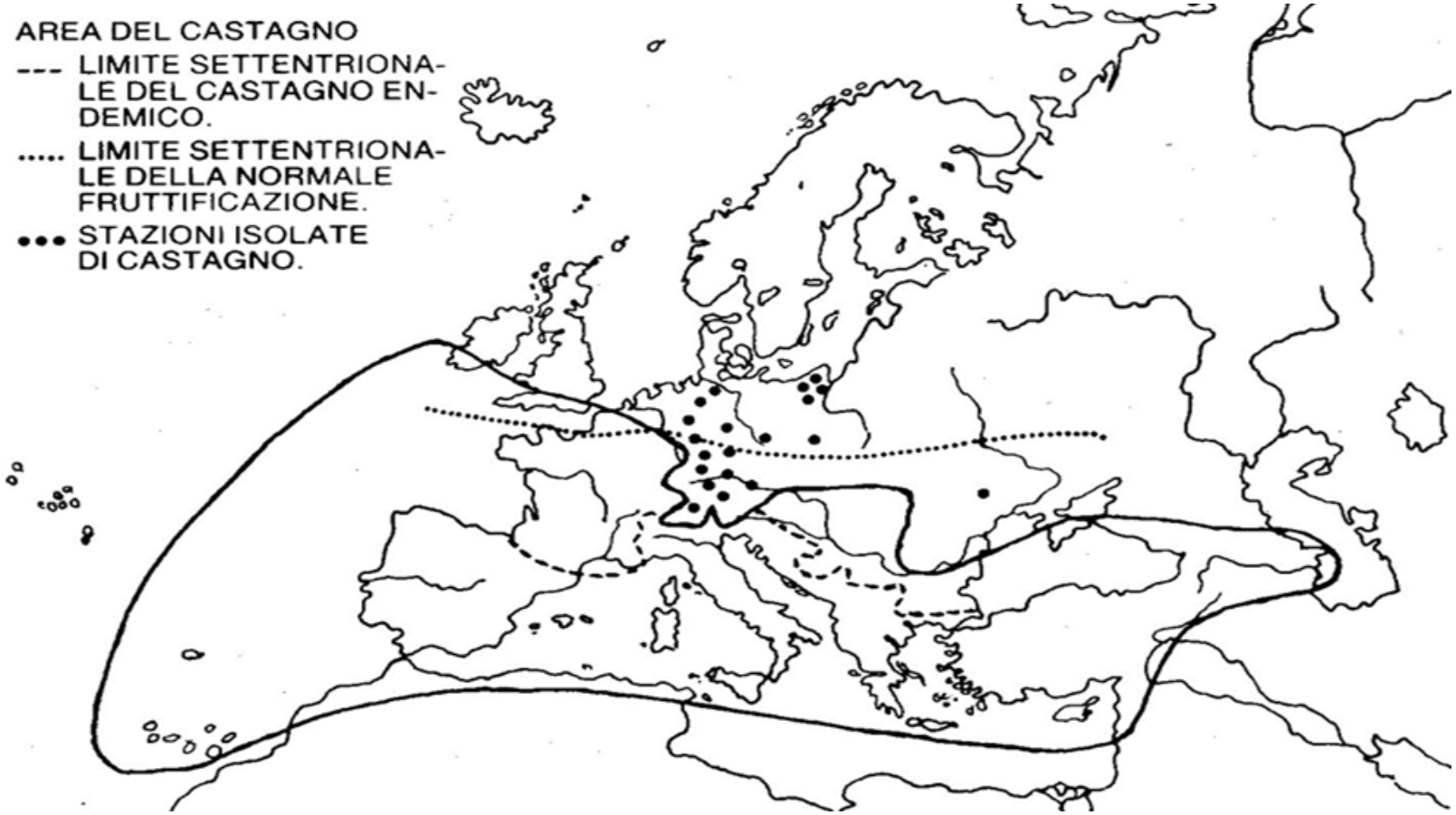
ITALY'S NUT IMPORTATION

	Tons	%	Euro/kg
• Spain	11.697	+2.43	1,75
• Portugal	7.036	-1,75	1.71
• Albania	3.094	-20,29	1,35
• Greece	2.986	-31.71	2,69
• Turkey	2.420	- 66,43	2.61
• Slovenia	1.357	- 8,64	1,15
• Chile	807	+94,51	1.65
• World	31.670	-19,12	1,85

WHERE DO THEY GROW CHESTNUT?

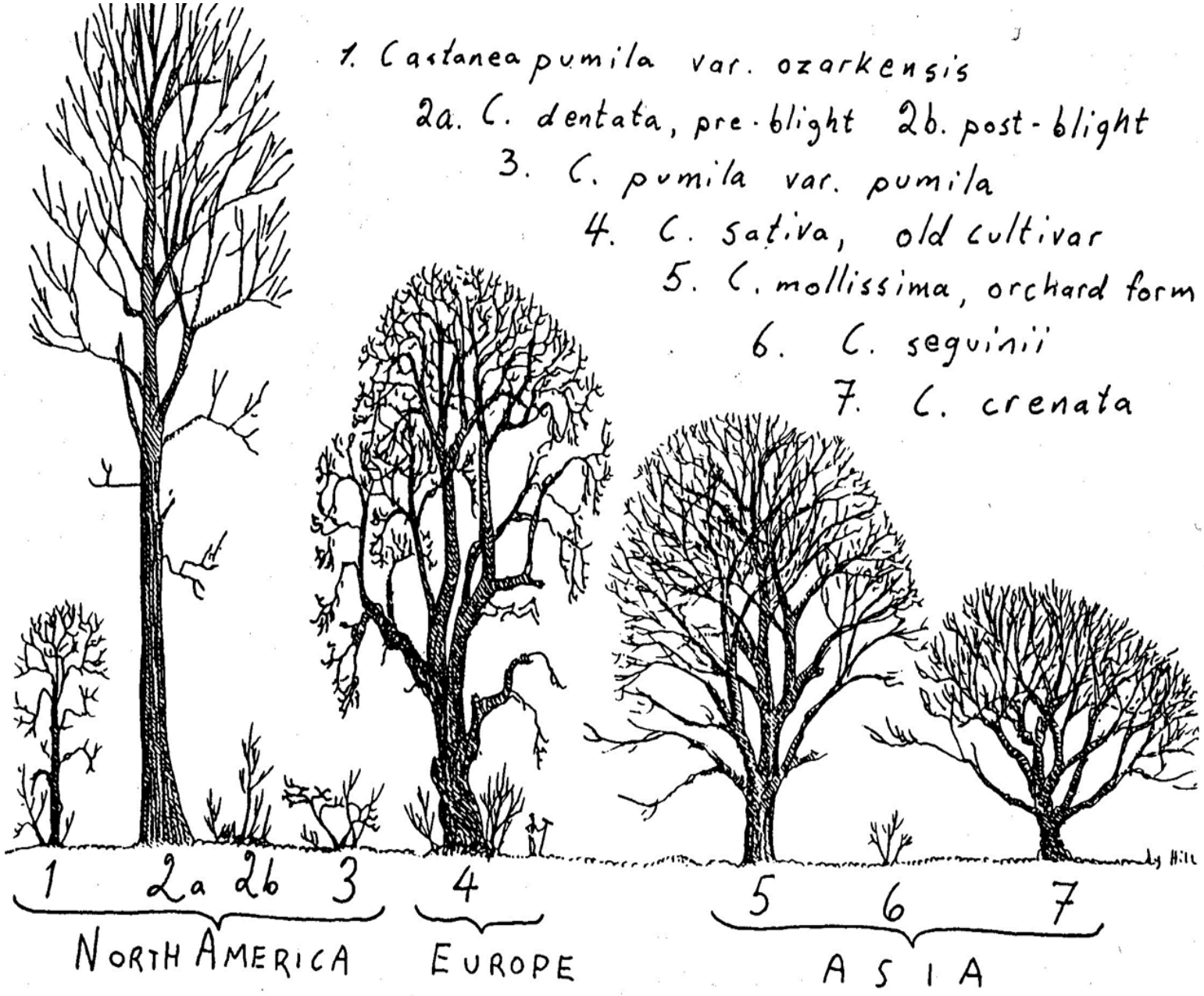


WHERE DO WE GROW CHESTNUT?

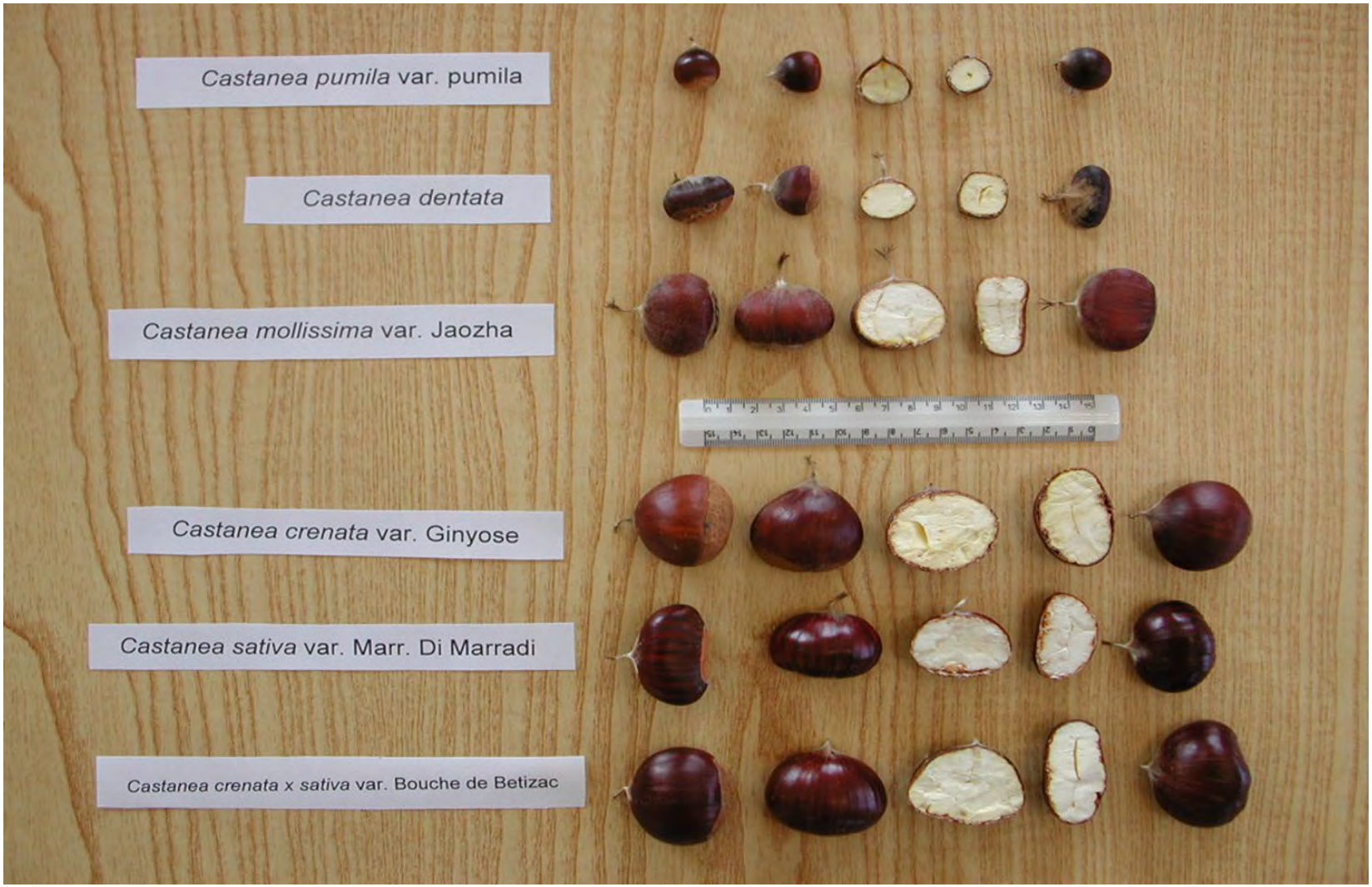


FROST DAMAGE

FROST DAMAGE


1. Castanea pumila var. ozarkensis
2a. C. dentata, pre-blight 2b. post-blight
3. C. pumila var. pumila
4. C. sativa, old cultivar
5. C. mollissima, orchard form
6. C. seguinii
7. C. crenata
1 2a 2b 3
4
5 6 7
NORTH AMERICA
EUROPE
ASIA

SPECIES


Castanea pumila var. pumila
Castanea dentata
Castanea mollissima var. Jaozha
Castanea crenata var. Ginyose
Castanea sativa var. Marr. Di Marradi
Castanea crenata x sativa var. Bouche de Betizac

European chestnut (Castanea sativa)

Cervaschine

European chestnut (Castanea sativa)

Tempuriva

European chestnut (Castanea sativa)

Castagna della Madonna

European chestnut (Castanea sativa)

Garrone Rosso

European chestnut (Castanea sativa)

Marrone di Chiusa Pesio

European chestnut (Castanea sativa)

Belle Epine (Pollinizer)

Euro-Japanese hybrids (Castanea crenata X C. sativa)

Bouche de Betizac

Euro-Japanese hybrids (Castanea crenata X C. sativa)

Precoce Migoule

Euro-Japanese hybrids (Castanea crenata X C. sativa)

Vignols

Euro-Japanese hybrids (Castanea crenata X C. sativa)

Marsol

Chinese chestnut (Castanea mollissima)

JAOZHA

MARRONI: BEST VARIETES EVER

MARRON GLACEES: CANDIED NUTS, A TOUCH OF HEAVEN

MANUAL SORTING

MECHANICAL SORTING


COM.I.FRUT.
CASTAGNE
STERILIZZATE
CALIBRO 60/65 Kg. 5 netti

TRADITIONAL CHESTNUT GROVES

TRADITIONAL CHESTNUT GROVES

TRADITIONAL CHESTNUT GROVES

NEW ORCHARDS

HIGH DENSITY ORCHARDS: A MISTAKE

NEW ORCHARDS

NEW ORCHARD ON SLOPE

WEED CONTROL BY MULCHING

WEED CONTROL BY MULCHING

SOIL AND HYDRAULIC MANAGENET

SOIL AND HYDRAULIC MANAGEMENT

WEED AND GROWTH CONTROL BY MULCHING

CONTROLLO DELLE INFESTANTI E TELO PACCIAMANTE

Il telo pacciamante, largo 130 cm, viene stirato longitudinalmente e bloccato lateralmente interando i due lembi estremi di destra e sinistra per circa 40 cm. Il risultato è una doppia fascia di bordo priva di

WIDE RANGE SPRINKLE IRRIGATION

BEST CHOICE: 2 YRS OLD, BAREROOT PLANTS, FULL ROOT

BEST WAY TO GRAFT: TRIANGLE

GRAFTING ONE YR OLD SEEDLING

PLASTIFIED TAR TO SEAL GRAFTS


BB

GRAFT UNCOMPATIBILITY

GRAFT UNCOMPATIBILITY

SEEDLING ARE NO GOOD

«IN VITRO» TISSUE CULTURE IS THE RIGHT WAY

«IN VITRO» TISSUE CULTURE OF EURO-JAPANESE HYBRID «MARSOL»

EFFECT OF CLONALLY PROPAGATED INTERSPECIFIC HYBRID CHESTNUT ROOTSTOCKS ON SHORT-TERM GRAFT COMPATIBILITY WITH FOUR CULTIVARS OF ITALIAN "MARRONE"

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Abstract

Differences between clonally-propagated interspecific hybrid chestnut rootstocks were observed when short-term graft compatibility with four Italian cultivars of 'Marrone' was investigated. The rootstock clone CA07 had the highest overall percentage of successful grafts. It had an "excellent" compatibility rating with two of the 'Marrone' cultivars but "good" or "poor" ratings with the other two. CA15 had a lower percentage of graft success than CA07 but the unions formed were rated as "good" for all four 'Marrone.' The success rate for CA74 was worse than that for CA07 and CA15 and its compatibility ratings ranged from "good" to "poor." As rootstocks for 'Marrone,' the clones CA90 and CA118 were almost total failures.

As a clonal rootstock, CA07 (Marsol) is very promising and worthy of further trial in the Cuneo area. It gave excellent results when used as a rootstock for all of the cultivars used in this experiment, particularly in combination with 'Marrone di San Mauro Saline.' And, even though the percent take with 'Marrone di Chiusa Pesio' on CA07 was not very high, the quality of the graft union appeared near perfect. The rootstock CA15 is also deserving of further study. The grafted plants from this study will be planted in an orchard setting for future observations on long-term compatibility, vigor, and yield. CA74 gave mediocre results with a low percentage of successful grafts. It would not be recommended for any of the four marroni cultivars tested here. The apparent lack of graft compatibility for the rootstocks CA90 and CA118 may be due to problems of cold hardiness, especially the late spring frost suffered by the plants shortly after the grafts had been executed. Another trial using CA90 and CA118 as rootstocks for 'Marrone di Chiusa Pesio' and two other *C. sativa* cultivars was very successful when the grafting date was delayed until 25 May. Even though grafting could be delayed (effectively lengthening the grafting season in Cuneo), induced lack of cold hardiness may be a persistent problem as the grafted plants mature.