PLANTS AND PLANTING IN MEDITERRANEAN LANDSCAPES
(VOLUME 1)

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CLIMBERS

Chapter 7 CLIMBERS

Subchapter 7.1 Introduction

INTRODUCTION

Climbing plants or climbers refer to species capable of ascending vertically or adhere naturally to different types of supports (walls, trees, rocks…) This particular type of species is often confused with other species that have long sarmentose-type stems that can cover walls in height and width when there is an artificial anchor to fix them. This second group is known as sarmentose.

Most climbing plants inhabit wooded places and need trees as support to climb in search of light (necessary for the correct functioning of its upper part) However, its roots are accustomed to a shady soil and low temperatures. This thermal need gradient must then be considered when placed on a sunny garden wall.

Climbing plants in a broad sense have developed various anchoring systems; Some, like ivy, have sticky pads on their adventitious roots and others with pads that are shaped like suckers.

Other climbers, such as the vine, adhere and ascend using tendrils, which are like long leaf petioles devoid of limbs that through circular oscillatory movements (known as circumnutation) find contact with an element that serves as a grip. Then, the adaxial (upper side) cells grow at a much higher rate than the abaxial (lower side) ones, so that the development of the tendril takes place in a helical manner, repeatedly surrounding the object. Many *Clematis* use a similar system; however, they do not possess these specialized tendrils and so wrap their long petioles over anything that can support them.

The most common technique is the coiling of the stems that allow the plant to curl around the support and climb. This is typical of honeysuckle (*Lonicera spp*.), wisteria (*Wisteria spp*.) and many jasmine species (*Jasminum spp*.).

Sarmentose plants are limited to producing long and flexible stems in order to reach high points that will support them; the most common example is that of climbing roses, which in the case of not having an adequate support to which their stems can hook, or unless a new shoot finds the branch of a bush or a tree above its apex, will curve towards the ground. Subsequently, other stems will grow that, finding no support, will fall on the previous ones, so that this sarmentose plant can take on the appearance of a very untidy bush.

Using climbing plants in the landscape requires the application of the compositional principles that rule garden design (especially regarding colors, textures and flowering times). An early flowering climber can be planted next to a late flowering climber or vine or tree, or vice versa, thus achieving a longer total flowering period.

Likewise, the blooms, foliage, and autumn tones of climbers and sarmentose can be combined with the fronds, fruits and blooms of other climbing or sarmentose plants and trees.

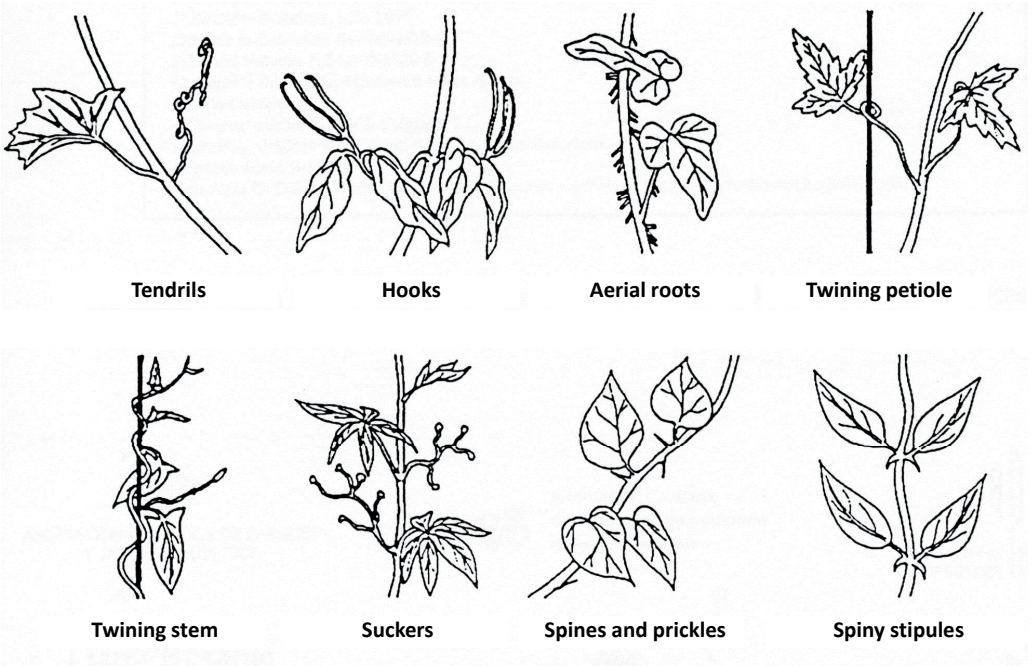


Figure 7.1.1: Different ways climbers attach themselves to surfaces (From: Normas Tecnológicas de Jardinería y Paisajismo (C.O.E.T.A.P.A.C.))

Climbers are a versatile group of garden plants in which species with flowers or foliage of intense color can be chosen to create a visual accent, and others can provide a diffuse and subtle background; some, such as *Wisteria* and *Vitis*, also show interesting architectural forms when they lose their leaves in winter.

Over time, climbers will complement and even disguise a support, be it a wall, a fence or trellis. They also highlight the warm tones of the stone or brick and soften the hard architectural lines, while being able to cover the less attractive parts of the building and other constructions present in the garden. They can also serve as dense visual screens or shelter from the wind if grown on trellis-type supports.

Sarmentose species such as yellow jasmine (*Jasminum mesnyi*) are a very effective ground cover and have a particularly interesting effect when they are placed near a bench or spread over the edges of a terrace.

Both climbers and sarmentose species can be included in mixed shrub beds to which they contribute with their curved growth and their special texture.

Genus and species	Flower (time of year)	Climate	Attachment system
Ampelopsis veitchii	Red leaf (IX -X)	Warm/temperate	Adventitious Roots
Asparagus sprengeri		Warm/temperate	Twining
Bignonia ungis-cati	Yellow (IV-VI)	Warm/temperate, sunny	Tendrils
Bougainvillea glabra	Red-rose-orange	Hot	Training
Campsis radicans	Red (VIII-X)	Indifferent	Adventitious Roots
Clerodendrum thomsoniae	White-red (V-VIII)	Hot, shade	Twining
Ficus radicans (F. repens)		Shade	Adventitious Roots
Hedera canariensis variegata	Green-yellow leaf	Partial shade	Adventitious Roots
Hedera helix		Indifferent	Adventitious Roots
Ipomoea sp	Purple, white (V-X)	Hot, sunny	Twining
Jasminum azoricum	White ((V-IX)	Hot	Twining
Jasminum nitidum	White (IV-XI)	Hot, sunny	Twining
Jasminum nudiflorum	Yellow (IV-V)	Warm/temperate	Training
Jasminum offlcinale	White (V-X)	Hot	Twining
Jasminum polyanthum	White rose (III)	Hot	Twining
Jasminum sambac	Double White (IV-IX)	Hot	Twining
Jasminum simplicifolium	White (V-VIII)	Hot, sunny	Twining
Lonicera caprifolium	Yellow (V-VIII)	Warm/temperate	Twining
Lonicera peryclimenum	Yellow (VII-VIII)	Hot	Twining
Pandorea jasminoides	White-red (VI-IX)	Warm/temperate	Twining
Parthenocissus sp	Reddish leaf (IX -X)	Indifferent, sunny	Sucker
Passiflora x alatocaerulea	Violet(IV-X)	Hot, sunny, partial shade	Tendrils
Passiflora x "Amethystina"	Red-White all year round	Hot, sunny	Tendrils
Passiflora caerulea	White -blue (VI)	Resists cold temperatures	Tendrils
Passiflora edulis	White (V-VI)	Hot, sunny	Tendrils
Passiflora quadrangularis	Red -cream-violet	Hot, sunny	Tendrils
Plumbago auriculata	Blue (VI-IX)	Warm/temperate	Training
Podranea ricasoliana	Red (VI – VIII)	Warm/temperate	Training
Pysostegia venusta	Orange(II-IV)	Hot, sunny, partial shade	Tendrils
Rosa banksiae	White yellow	Warm/temperate	Training
Rosa x hybrida	Various	Warm/temperate, sunny	Training
Senecio scandens	Yellow (X-I)	Hot, sunny	Twining
Senecio confusus	Red (III-XI)	Hot, sunny	Twining
Solandra grandiflora	Yellow (XII-VI)	Hot, sunny	Training
Tecomaria capensis	Red	Hot	Training
Thunbergia grandiflora	Blue (IV-XI)	Hot, sunny	Twining
Trachelospermum jasminoides	White (V-VI)	Warm/temperate, partial shade	Twining
Wisteria sinensis	Purple(IV)	Indifferent	Twining

Table 7.1.1: Climbers and Sarmentose plants (Roman numerals refer to time of flowering months (January =I and December =XII)

Red	Blue, Mauve Violet	Yellow	Orange	Red	White
Bauhinia	*Clematis*	*Allamanda*	*Bougainvillea*	*Bougainvillea*	*Bougainvillea*
Bougainvillea	*Clitoria*	*Bignonia*	*Lonicera*	*Clematis*	*Calonyction*
Campsis	*Heliotropium*	*Bougainvillea*	*Mutisia*	*Mandevilla*	*Clematis*
Clematis	*Ipomoea*	*Campsis*	*Pyrostegia*	*Podranea*	*Clerodendrum*
Clerodendrum	*Passiflora*	*Hibbertia*	*Thunbergia*	*Antigonon*	*Jasminum*
Dipladenia	*Plumbago*	*Jasminum*	*Rosa*	*Rosa*	*Mandevilla*
Distictis	*Solanum*	*Kerria*			*Pandorea*
Lonicera	*Thunbergia*	*Lonicera*			*Phaseolus*
Passiflora	*Wisteria*	*Muehlenbeckia*			*Polygonum*
Quisqualis		*Rosa*			*Quisqualis*
Rosa		*Senecio*			*Solanum*
Tecomaria		*Solandra*			*Stephanotis*
Tropaeolum		*Tecoma*			*Thunbergia*
Parthenocissus		*Thunbergia*			*Wisteria*
Senecio		*Hedera*			*Rosa*
					Trachelospermum

Table 7.1.2: Climbers and Sarmentose plants categorized by color

Trellis and patios:	Fences and exterior walls:
Allamanda	*Campsis*
Bougainvillea	*Distictis*
Jasminum	*Heliotropium*
Passiflora	*Ipomoea*
Podranea	*Jasminum*
Polygonum	*Kerria*
Pyrostegia	*Lonicera*
Quisqualis	*Mikania*
Rosa	*Pandorea*
Solandra	*Passiflora*
Solanum	*Phaseolus caracalla*
Thunbergia	*Plumbago*
Wisteria	*Podranea*
	Polygonum
Walls:	*Pyrostegia*
	Rosa
Ampelopsis	*Solandra*
Bignonia ungis-cati	*Solanum*
Campsis radicans	*Stephanotis*
Ficus repens	*Tecoma*
Hedera helix	*Tecomaria*
Parthenocissus	*Thunbergia*
	Trachelospermum

Tabla 7.1.3: Climbers and Sarmentose plants for different applications

Climbers for North and East walls:
Akebia quinata
Celastrus orbiculatus
Clematis montana
Hedera colchica
H. helix
Humulus lupulus
Hydrangea anomala subesp. petiolaris
Lathyrus latifolius
Lonicera x americana
L. x brownii
L. sempervivens
L. x tellmanniana
Pileostegia viburnoïdes
Schizophragma integrifolium
Tropaeolum speciosum
Vitis coignetiae

Climbers that tolerate air pollution:
Campsis radicans
Fallopia baldschuanicum
Hydrangea anomala subesp. *periolaris*

Climbers for alkaline soils:
Akebia quinata
Jasminum officinale
Wisteria sinensis
Hedera canadiensis (This species is rather more delicate than other ivies and therefore in harsh winters pruning is recommended)

Tabla 7.1.4: Climbers and Sarmentose plants for different applications

Common ivy (*Hedera helix*) resists cold weather and has numerous green and variegated forms with leaves of varying sizes. Their completely green varieties are also decorative, especially those with extremely lobed leaves.

Among the most colorful climbing plants, the virgin vine stands out. *Parthenocissus tricuspidata* 'Veitchii' gives rise to a purple carpet on the walls in autumn. *Parthenocissus quinquefolia*, with five leaflets, is another virgin vine with foliage that is green when in season and scarlet or orange in autumn.

Subchapter 7.2 Species

This subchapter outlines **15 species of climbing plants** used in landscape design. They have been selected primarily for their ornamental use, botanical interest, or other characteristics. As a result, an in-depth analysis is carried out in this subchapter.

Firstly, a table shows the different parameters and values that have been used to describe each species in its specific botanic datasheet.

Each datasheet gathers the information of each species and describes its botanical and ecological aspects, uses, cultivation, and other characteristics of interest, including its commercialization. This information is complemented by photographic information, which shows the general appearance of the described species and different morphological details.

PARAMETERS AND VALUES USED IN THE BOTANIC DATASHEET	
TAXONOMY	
TAXONOMIC RANKS	DIVISION, SUBDIVISION, TYPE, ORDER, FAMILY
VARIETIES	OTHER VARIETIES OF INTEREST
STRUCTURE	
SHAPE	ROUNDED, OVAL, COLUMNAR, CONE, EXTENDED, IRREGULAR, PARASOL, FAN-SHAPED, HORIZONTAL, PALMIFORM, PENDULAR, HERBACEOUS, GRAMINOID
HEIGHT	AS APPROPRIATE- IN METERS OR CENTIMETERS
DIAMETER	AS APPROPRIATE -IN METERS OR CENTIMETERS
TEXTURE	TEXTURE: LEAVES>10CM= COARSE. LEAVES OR LEAFLETS BETWEEN 2-10CM= MEDIUM. LEAVES OR LEAFLETS <2CM= FINE
SHADE	LIGHT, FULL, DENSE
ROOT	TAPROOT, SCATTERED, OBLIQUE, HORIZONTAL, AERIAL, ADVENTITIOUS
MORPHOLOGY	
STEM	
TYPES OF STEM	UNDERGROUND, CREEPING, WOODY, CLIMBERS; YES, NO
LEAF	
TYPE	EVERGREEN, SEMI-EVERGREEN DECIDUOUS, SEMI-DECIDUOUS
SIZE OF LEAF	LENGTH OF LEAF (cm)
SIZE OF LEAFLET	LENGTH OF LEAFLET (cm)
COLOR OF UPPER SIDE (US)	PALE GREEN, LIGHT GREEN, DARK GREEN , BLUE/GREEN, GREY, PURPLE; PALE; YELLOW; VARIEGATED
COLOR OF LOWER SIDE (LS)	GREEN, LIGHT GREEN, DARK GREEN, BLUE/GREEN, GREY PURPLE; PALE; YELLOW; VARIEGATED; RUST COLORED; SILVER
TEXTURE OF UPPER SIDE (US)	SHINY, ROUGH, GLABROUS, TOMENTOSE, HAIRY, ROUGH, SCALY, VISCOSE
TEXTURE OF LOWER SIDE (LS)	SHINY, ROUGH, GLABROUS, TOMENTOSE, HAIRY, ROUGH, SCALY, VISCOSE
COMPOUNDS	NO COMPOUND LEAVES YES. COMPOUNDS: IMPARIPINNATE, PARIPINNATE, TRIFOLIATE, PALMATE, PALMIFORM, PALM, PINNATE, BIPINNATE
HARDNESS	CORIACEOUS, SOFT, SUCCULENT, HARD, SUB CORIACEOUS
ARRANGEMENT	OPPOSITE, ALTERNATE, ROSETTE, VERTICAL
VENATION	PINNATE, PALMATE, PARALLEL, RETICULATE, SCALY, A3 MAIN VEINS
SHAPE	ROUNDED, LINEAR, LANCEOLATE, FALCATE, OVAL, OBLONG, ELLIPTIC, DELTOID, RHOMBOID, SPATULATE, ACICULAR GROUPS 2, ACICULAR GROUPS 3, ACICULAR GROUPS 5, ACICULAR GROUPS, ACICULAR IN 1 PLANE, ACICULAR IN SPIRAL, SCALY, PALM 7 LOBES, PALM 5 LOBES- PALM 3 LOBES, POLYMORPHIC; PANDURIFORM; PINNATIFID
LEAF MARGIN	ENTIRE, CILIATE, DENTATE, CRENATE, SERRATED, DOUBLE SERRATED, LOBED, DOUBLE LOBED
APEX	ACUTE, CUSPIDATE, OBTUSE, RETUSE,
LEAF BASE	ATTENUATE, CORDATE, ROUNDED, ASYMMETRIC
PETIOLE	LONG, SHORT, SESSILE, WIDE
FLOWER	
SIZE	HERMAPHRODITE (MALE/FEMALE FLOWERS): (CM OR MM)
TYPE	UNISEXUAL, HERMAPHRODITE
REPRODUCTION	MONOECIOUS, DIOECIOUS, HERMAPHRODITE, POLYGAMY, SYNOICOUS, STERILE

FLOWERING	SINGLE, INFLORESCENCE IN CORYMB, CYMOSE, RACEME, SPIKE, UMBEL, CATKIN, SPADIX, FLORET OR CAPITULUM, PANICLE (+ INFLORESCENCE SIZE (IN CM OR MM))
FRAGRANCE	YES, NO, UNPLEASANT
FRUIT	
SIZE	IN CM OR MM
TYPE	FOLLICLE, PLURIFOLLICLE, LEGUME, LOMENT, SAMARA, DOUBLE SAMARA, PLURISAMARA, CAPSULE, POLYATHENE, TETRACHENE, NUT, ACHENE; SYCONIUM, HESPERIDIUM, PLURISAMARA, ACORN, COMPOUND FRUIT, PLURIFOLLICLE, BERRY, RACEME, POME, BALAUSTA, DRUPE, CONIFER CONE, PSEUDO CONIFER, PINECONE
EDIBLE FRUIT	YES, NO
COLOR OF FRUIT	RED, GREEN, YELLOW, BROWN, BLACK, PALE, WHITE, PURPLE
FRUITING SEASON	INTERVAL OF MONTHS: JAN, FEB, MAR, APR, MAY, JUN, JUL, AGO, SEP, OCT, NOV, DEC
DEVELOPMENT	
GROWTH	SLOW, VERY SLOW, MEDIUM, FAST, VERY FAST
LONGEVITY	<25 YEARS, 25 YEARS, 50 YEAR, 75 YEARS, 100 YEARS, 150 YEARS, 200 YEARS, 250 YEARS, 300 YEARS, >300 YEARS
ECOLOGY	
CLIMATE	
ALTITUDE	NATURAL HEIGHT OF THE PLANT: interval of sea level altimetry
IRRIGATION	++HIGH, MODERATE, LOW, ++LOW (very low/low < 350 mm; Very high/high > 750 mm)
MINIMUM TEMPERATURE AND INTERNATIONAL CLASSIFICATION	MINIMUM TEMPERATURES: DEGREES CELSIUS **CLASSIFICATION ACCORDING TO EUROPEAN REGULATION**: (SEE MAP) G2____ HOT GREENHOUSES IN SOUTHERN EUROPE G1____ COLD GREENHOUSES IN SOUTHERN EUROPE H5____ THE PLANT SUPPORTS MINIMUM TEMPERATURES FROM OºC TO -5ºC H4____ THE PLANT SUPPORTS MINIMUM TEMPERATURES FROM -5ºC TO -10ºC H3____ THE PLANT SUPPORTS MINIMUM TEMPERATURES FROM -10ºC TO -15ºC H2____ THE PLANT SUPPORTS MINIMUM TEMPERATURES FROM -15ºC TO -20ºC H1____ THE PLANT SUPPORTS MINIMUM TEMPERATURES FROM -20 **CLASSIFICATION INTERNATIONAL REGULATIONS.** ACCORDING TO MINIMUM TEMPERATURE RANGES Z1____SUPPORT MINIMUM TEMPERATURES OF -50ºC Z2____ SUPPORT MINIMUM TEMPERATURES OF -50ºC TO -40ºC Z3____ SUPPORT MINIMUM TEMPERATURES OF -40ºC TO -30ºC Z4____ SUPPORT MINIMUM TEMPERATURES OF -30ºC TO -20ºC Z5____ SUPPORT MINIMUM TEMPERATURES OF -20ºC TO -10ºC Z6____ SUPPORT MINIMUM TEMPERATURES OF -10ºC TO -0ºC Z7____ SUPPORT MINIMUM TEMPERATURES OF -0ºC TO 10ºC Z8____ SUPPORT MINIMUM TEMPERATURES OF 10ºC TO 20ºC Z9____ SUPPORT MINIMUM TEMPERATURES OF 20ºC TO 30ºC Z10___ SUPPORT MINIMUM TEMPERATURES OF 30ºC TO 40ºC Z11___ SUPPORT MINIMUM TEMPERATURES OF MORE THAN 40ºC
EXPOSURE TO SUNLIGHT	FULL SUN, FULL SHADE, SHADE, PART SHADE
DROUGHT RESISTANCE	YES, NO, MODERATE
FROST RESISTANCE	YES, NO, MODERATE

SOIL	
PH OPTIMUM	PH: ALL TYPES; NEUTRAL, ACID, BASIC (OR INTERVAL OF PH)
LEVEL OF FERTILITY	FERTILE, AVERAGE, POOR
TEXTURE OF SOIL	SANDY, SLIT OR LOAMY, CLAYEY, SANDY/LOAMY, CLAYEY LOAMY - ALL TYPES
DRAINAGE	HIGH, MODERATE, LOW
RESISTANCE TO SEA	YES, NO, MODERATE
RESISTANCE TO LIME	YES, NO, MODERATE
USES	
RESISTANCES	
COASTAL	1ST LINE, 2ND LINE, NO.
POLLUTION	HIGH, MODERATE, LOW
WIND	HIGH, MODERATE, LOW
APPLICATIONS	
SLOPE **CARPET** **GROUPS** **WALLS** **TRELLIS** **ISOLATED**	YES, NO
PARAMETERS AND VALUES USED IN THE BOTANIC DATASHEET	
SPACING	MINIMUM RECOMMENDED DISTANCE BETWEEN PLANT: M, CM
PLANTING AND PLANT HEALTH	
PLANTING AND PLANT HEALTH	
CALENDARS	
CHROMATIC CALENDAR	FOLIAGE, FLOWERING, FRUITING SEASON: the color white represented with gray or black cell
CULTIVATION CALENDAR	SOWING, PLANTING, PRUNING
TREATMENTS CALENDAR	FUNGICIDES, PESTICIDES, FERTILIZERS, HERBICIDES
COMMERCIALIZATION	
PRESENTATION	BR (BARE ROOT), CT (CONTAINER or POT (LITERS), CE (ROOT BALL), CEY (ROOT BALL IN GYPSUM), ROOT BALL IN MESH
SIZE OF CONTAINER	LITERS
TOTAL HEIGHT	CM, M OR YEARS
TRUNK HEIGHT	CM, M

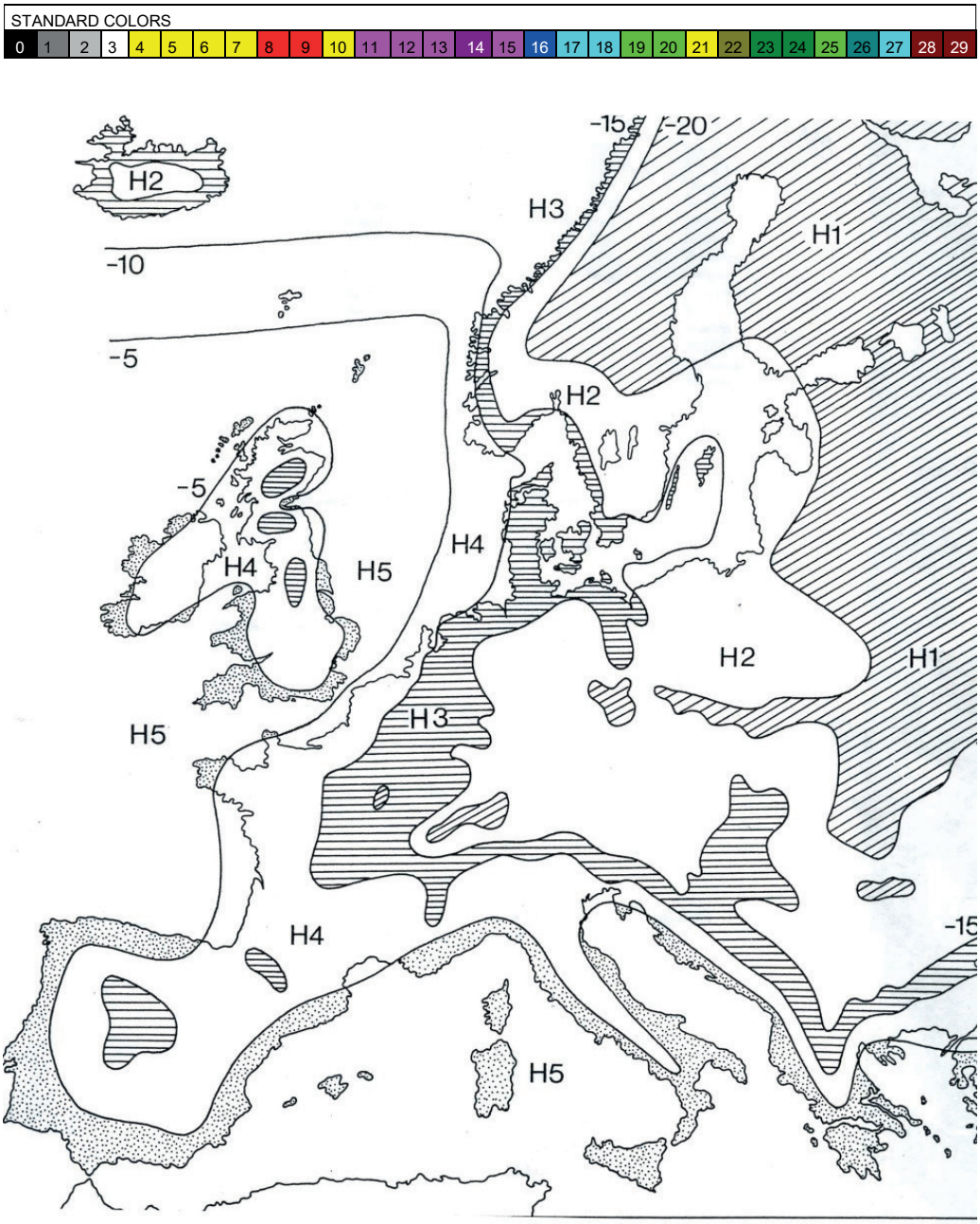


Figure 7.2.1: Thermal classification map according to European regulations

LIST OF CLIMBING SPECIES DESCRIBED

1. *Bougainvillea glabra*
2. *Campsis x hybrida*
3. *Ficus repens*
4. *Hedera helix*
5. *Jasminum mesnyi*
6. *Jasminum officinale*
7. *Lonicera japonica*
8. *Macfadyena ungis-cati*
9. *Parthenocissus tricuspidata*
10. *Plumbago auriculata*
11. *Solandra maxima*
12. *Solanum jasminoides*
13. *Tecomaria capensis*
14. *Vitis vinifera*
15. *Wisteria sinensis*

BOUGANVILLEA

CLIMBER

Bougainvillea glabra

BUGANVILLA (SPANISH) · (VALENCIAN) · PAPER FLOWER, BOUGANVILLEA (ENGLISH) · BOUGANVILLÉE (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 5 M	Diameter: 3 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	CARYOPHYLLALES
FAMILY:	NYCTAGINACEAE

VARIETIES

MORPHOLOGY		
Stem	UNDERG: NO	WOODY: YES
	CREEPING: NO	CLIMBING: NO
Leaf	COMPOUND: NO	
EVERGREEN	HARDNESS: SOFT	
SIZE: 4-6 CM	ARRANGEMENT: ALTERNATE	
	VENATION: PINNATE	
	SHAPE: OVAL/LANCEOLATE	
COLOR: US: DARK GREEN	MARGIN: ENTIRE	
LS: DARK GREEN	APEX: ACUTE	
TEXTURE: US: SMOOTH	LEAF BASE: ATTENUATE	
LS: SMOOTH	PETIOLE: SHORT	
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE: 3-4 cm	Flowering: RACEMES	Fragrant: NO
Fruit	Type: ACHENE	Color
	Edible	Fruiting season
SIZE:		
Growth	Rate: MEDIUM	Longevity: 50 YEARS

ECOLOGY		
Climate	Temperature: -7ºC,H4,Z6	Drought resistant: MODERATE
ALTITUDE: 0-400	Sun exposure: FULL SUN	Frost resistant: MODERATE
IRRIGATION: MODERATE		
Soil	Texture: ALL TYPES	Salt resistant: MODERATE
pH: 6.5-8	Drainage: MODERATE	Lime resistant: HIGH
FERTILITY: MODERATE		

USES				
Resistances		Applications		
COASTAL: MODERATE		SLOPES: YES	WALLS: YES	
POLLUTION: MODERATE		CARPET: NO	TRELLIS: YES	
WINDY: MODERATE		GROUP: YES	ISOLATED: YES	

POINTS OF INTEREST

Native to Brazil, this is a very popular climbing plant for its spectacular flowering that in adequate conditions of sunlight and orientation will provide continuous blooms for several months. This species has produced multiple varieties with colors that vary from white, violet-purple, red, yellow, salmon to purple and that are provided by the bracts that accompany some insignificant flowers. It needs to be cut back to control growth. In late autumn, cut the shoots close to the main structure, cutting the secondary shoots leaving only 2 or 3 leaves. However, if it continues to flower until the end of the year, it is possible to delay pruning until the beginning of the following spring and before it starts to grow. This variety of climber requires support.

SPACING: 3 M

PLANTING AND PLANT HEALTH

This species of climbers adapts well to the Mediterranean climate, tolerating temperatures as low as -7ºC. In the coldest regions it is recommended to use them in coastal places and facing south. It adapts well to different soil conditions, but prefers fertile and light ones. It requires moderate watering and easily resists drought (it is even convenient to not water it during the summer months). It prefers moderate-high humidity and full sun. Propagation by cutting of flowering branches.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X				

Sowing ☐ Planting ■ Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ■ Pesticides ■ Fertilizers ■

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

CAMPSIS

CLIMBER

Campsis x híbrida

JAZMÍN DE VIRGINIA (SPANISH) | VALENCIAN | BIGNONE (ENGLISH) | BIGNONE DE VIRGINIE (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 15 M	Diameter: 5 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	SCROPHULARIALES
FAMILY:	BIGNONIACEAE

VARIETIES
"FLAVA"

MORPHOLOGY		
Stem	UNDERG: NO; CREEPING: NO	WOODY: YES; CLIMBING: NO
Leaf	COMPOUND: IMPARIPINNATE; HARDNESS: SOFT; ARRANGEMENT: OPPOSITE; VENATION: PINNATE; SHAPE: OVAL; MARGIN: SERRATE; APEX: ACUMINATE; LEAF BASE: ATTENUATE; PETIOLE: SHORT	
DECIDUOUS		
SIZE: 15-20 CM (LEAFLET:2-10CM)		
COLOR: US: GREEN; LS: GREEN		
TEXTURE: US: SMOOTH; LS: HAIRY		
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE: 5-8CM	Flowering: CORYMB	Fragrant: NO
Fruit	Type: CAPSULE	Color
SIZE:	Edible	Fruiting season
Growth	Rate: FAST	Longevity: 50 YEARS

ECOLOGY		
Climate	Temperature: -3ºC	Drought resistant: MODERATE
ALTITUDE: 0-400	Sun exposure: SUN/PARTIAL SHADE	Frost resistant: MODERATE
IRRIGATION: MODERATE		
Soil	Texture: LOAMY/SANDY	Salt resistant: LOW
pH: 6.5-7.5	Drainage: MODERATE	Lime resistant: MODERATE
FERTILITY: MODERATE		

USES				
Resistances		Applications		
COASTAL: MODERATE		SLOPES: NO	WALLS: YES	
POLLUTION: MODERATE		CARPET: NO	TRELLIS: YES	
WIND: MODERATE		GROUP: YES	ISOLATED: YES	

POINTS OF INTEREST

Native to Canada. It is a deciduous climber with a trunk that can thicken considerably and with exfoliating plates on the bark. Predomninately red-bearing flowers although red-orange and yellow varieties do exist. (var. 'Flava').

SPACING: 3 M

PLANTING AND PLANT HEALTH

It has no special requirements. When pruning, remove the lower suckers early. To control growth, cut back shoots from the previous year, leaving two shoots at the end of winter. In summer, trim untidy branches.Propagation is done in summer by layering branches. It can also be done using cuttings from young semi-withered branches, or from roots. For the varieties, grafting is carried out in the months of April-May.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X				
						X	X	X			

Sowing ☐ Planting ■ Pruning X ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ■ Pesticides ■ Fertilizers ■ ☐

COMMERCIALIZATION

Presentation(L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

FICUS

Ficus repens

CLIMBER

FICUS TREPADOR (SPANISH) | VALENCIAN | CLIMBING FIG (ENGLISH) | FIGUIER NAIN / GRIMPANT (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 6 M	Diameter: 3 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	URTICALES
FAMILY:	MORACEAE

VARIETIES

MORPHOLOGY		
Stem	UNDERG: NO; CREEPING: NO	WOODY: YES; CLIMBING: YES
Leaf EVERGREEN	COMPOUND: NO	
SIZE: 2-3 CM	HARDNESS: CORIACEOUS	
COLOR: US:DARK GREEN, LS: LIGHT GREEN	ARRANGEMENT:	
TEXTURE: US: SMOOTH, LS: SMOOTH	VENATION: PINNATE	
	SHAPE: OVAL	
	MARGIN: ENTIRE	
	APEX: OBTUSE	
	LEAF BASE: ASYMMETRIC	
	PETIOLE: SHORT	
Flower SIZE:	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
	Flowering: RARELY	Fragrance: NO
Fruit SIZE:	Type: SYCONIUM	Color
	Edible: NO	Fruiting season
Growth	Rate: MEDIUM	Longetivty: 25 YEARS

ECOLOGY		
Climate ALTITUDE: 0-200, IRRIGATION: MODERATE	Temperature: 0ºC	Drought resistant: LOW
	Sun exposure: PARTIAL SHADE	Frost resistant: LOW
Soil pH: 6.5-7.5, FERTILITY: MODERATE	Texture: LOAMY	Salt resistant: LOW
	Drainage: MODERATE	Lime resistant: MODERATE

USES		
Resistances	Applications	
COASTAL: MODERATE	SLOPES: NO	WALLS: YES
POLLUTION: MODERATE	CARPET: NO	TRELLIS: NO
WIND: MODERATE	GROUPS: NO	ISOLATED: NO






POINTS OF INTEREST

Commonly known as climbing ficus or "Ficus pumila". It is an ideal choice for a houseplant. In its place of origin (tropical Asia and Australia) it can be both a climber and a creeper. It attaches itself to the ground or support elements with a glue-like material secreted from its aerial roots. When growing in a pot, it develops a bushy habit, losing elasticity in its stems. It needs indirect light, warm environments and cool temperatures. It is recommended to spray the leaves and keep the soil slightly moist. In the case of shrubby species, leaves are larger and generate flowers (although rarely) and fruits (which is why the species is also known as a climbing fig tree).

SPACING: 2 M

PLANTING AND PLANT HEALTH

Propagation can be done by cutting or layering (it is sufficient to put young stems in contact with peat so that they emit roots). Excessive moisture in the soil should be avoided since it can provoke rot.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Sowing ☐ Planting ☐ Pruning ☒ ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pesticides ☐ Fertilizers ☐ ☐

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

HEDERA

Hedera helix

CLIMBER

HIEDRA	HEURA	IVY	LIERRE
SPANISH	VALENCIAN	ENGLISH	FRENCH

STRUCTURE

Shape	Height	Diameter
SARMENTOSE	10-25 M	5 M
		Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	UMBELLALES
FAMILY:	ARALIACEAE

VARIETIES

MANY VARIETIES EXIST WITH DIFFERENT SIZES AND COLORS

MORPHOLOGY

Stem	UNDERG: NO CREEPING: YES	WOODY: YES CLIMBING: YES
Leaf	COMPOUND: NO HARDNESS: SOFT ARRANGEMENT: ALTERNATE VENATION: PINNATE SHAPE: RHOMBOID MARGIN: ENTIRE APEX: ACUTE LEAF BASE: ATTENUATE PETIOLE: LONG	
EVERGREEN SIZE: 5 CM COLOR: US:DARK GREEN LS: PALE GREEN TEXTURE: US: SMOOTH LS: SMOOTH		
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE:	Flowering: UMBELS IN RACEMES (4-5)	Fragrance: NO
Fruit	Type: BERRY	Color: BLACK
SIZE: __	Edible	Fruiting season: MARCH
Growth	Rate: FAST	Longevity: >100 YEARS

ECOLOGY

Climate	Temperature: -5ºC,H4,Z6	Drought resistant: MODERATE
ALTITUDE: 0-1000	Sun exposure: SHADE/SUN	Frost resistant: MODERATE
IRRIGATION: MODERATE		
Soil	Texture: ALL TYPES	Salt resistant: LOW
pH: 6,5-8	Drainage: __	Lime resistant: MODERATE
FERTILITY: MODERATE		

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPES:	YES	WALLS:	YES
POLLUTION:	MODERATE	CARPET:	YES	TRELLIS:	NO
WIND:	MODERATE	GROUP:	YES	ISOLATED:	YES

POINTS OF INTEREST

Ivy is versatile and very easy to grow both in the garden and on terraces. As climbing plants they quickly cover walls and other support elements to which they are attached by adventitious roots. The ivy is also a ground cover plant, since it emits new roots very easily in the nodes that touch the ground. Ivy can cover large surfaces such as those located under trees that have less dense crowns, slopes or herbaceous covers. It prefers moderate-high humidity and although it adapts to both sunny and shaded exposure, it prefers the latter. Pruning includes trimming the edges once or twice a year (in February or March) so that new shoots come out in spring and avoid disheveled and loose plants. At the time of tying them to walls, a long shoot can also be tied horizontally so that, from this horizontal guide, new vertical shoots emerge that allow the plant to be widened from the base.

PLANTING AND PLANT HEALTH

Propagation is normally carried out by means of apical cuttings of the stem of 7.5 to 10 cm in length or cuttings of one or three nodes with leaves. It is preferable to place them directly in the pot where they are going to be grown to avoid casualties in the transplanting stage. In nurseries, the temperature must be kept at approximately 20ºC and misting or fogging is convenient. The ease and time of rooting vary according to the varieties, faster for the green ones than for the variegated ones. Cutting can be done at any time of the year. *Xanthomonas*, *Colletrotrichum* and *Alternaria* fungi cause the appearance of leaf spots and are combated with products containing copper. The ivy attacked by the cochineal show a weakening of the leaves and consequently their fall. Those attacked by aphids show twisted terminal stems in spring.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X				

Sowing ☐ Planting ▭ Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ▭ Pesticides ▭ Fertilizers ▭

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(2)	80/100	
CT(3)	100/125	
CT(7)	125/150	
CT(30)	150/175	
CT(50)	175/200	
CT(85)	200/250	

JASMINUM *Jasminum mesnyi*

CLIMBER

JAZMIN AMARILLO (SPANISH) · GESMILER GROC (VALENCIAN) · PRIMROSE JASMINE (ENGLISH) · JASMIN PRIMEVÈRE (FRENCH)

STRUCTURE

Shape	Height	Diameter
SARMENTOSE	UP TO 5 M	5 M
Texture	**Shade**	**Root**
MEDIUM	PARTIAL	SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	GENTIANALES
FAMILY:	OLEACEAE

VARIETIES

MORPHOLOGY

Stem

UNDERG	NO	WOODY	YES
CREEPING	NO	CLIMBING	NO

Leaf

EVERGREEN

SIZE: 3-8 CM

3 LEAFLETS (2x7CM)

COLOR: US: DARK GREEN; LS: DARK GREEN

TEXTURE: US: SMOOTH; LS: SMOOTH

COMPOUND:	IMPARIPINNATE
HARDNESS:	SOFT
ARRANGEMENT:	OPPOSITE
VENATION:	PINNATE
SHAPE:	LANCEOLATE
MARGIN:	ENTIRE
APEX:	ACUTE
LEAF BASE:	ATTENUATE
PETIOLE:	SHORT

Flower

SIZE: 4 CM

Type	Reproduction
HERMAPHRODITE	HERMAPHRODITE
Type	**Fragrant**
SUBTERMINAL PANNICLE	YES

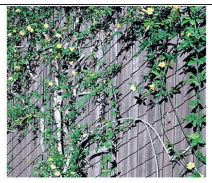
Fruit

SIZE:

Type	Color
BERRY	
Edible	**Fruiting season**

Growth

Rate	Longevity
MEDIUM	25-50 YEARS



ECOLOGY

Climate

ALTITUDE: 0-300

IRRIGATION: MODERATE

Temperature	Drought resistant
-2ºC	MODERATE
Sun exposure	**Frost resistant**
SUN/PARTIAL SHADE	LIGHT

Soil

pH: 6.5-8

FERTILITY: MODERATE

Texture	Salt resistant
ALL TYPES	LOW
Drainage	**Lime resistant**
MODERATE	MODERATE

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPES:	YES	WALLS :	YES
POLLUTION:	MODERATE	CARPET:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUP:	YES	ISOLATED:	YES

POINTS OF INTEREST

Native to Southwestern China. This species is a loosely compact evergreen climber. Ideal to cover walls, trellises or to decorate copses. Also used to cover slopes. It supports light frosts and regrows from the base in case of losing the aerial part due to intense winter cold. When flowering on the wood of the previous sprouting, it is advisable to prune it after flowering. Cut the least productive stems to the ground and the best flowering stems to a strong bud or to a lower stem. In case of growing in a limited space, yellow jasmine may need several prunings per year. This species of climber needs support.

SPACING: 2 M

PLANTING AND PLANT HEALTH

This species prefers warm places and light soils although it will grow in any type (except waterlogged soils). It requires normal garden watering and moderate ground humidity. Propagation is carried out by cutting the semi woody stem at the end of summer or by seed.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X	X	X	X	X

Sowing ☐ Planting ☐ Pruning ☒ ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pestcides ☐ Fertilizers ☐ ☐

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

JASMINUM

CLIMBER

Jasminum officinale

JAZMIN REAL	GESMILER	COMMON JASMINE	JASMIN COMMUN
SPANISH	VALENCIAN	ENGLISH	FRENCH

STRUCTURE		
Shape: SARMENTOSE	Height: 5-12 M	Diameter: 5 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	GENTIANALES
FAMILY:	OLEACEAE

VARIETIES

MORPHOLOGY

Stem	UNDERG: NO	WOODY: YES
	CREEPING: NO	CLIMBING: NO
Leaf	COMPOUND: IMPARIPINNATE	
EVERGREEN	HARDNESS: SOFT	
SIZE: 7-11 CM	ARRANGEMENT: OPPOSITE	
LEAFLETS:(5-9)	VENTATION: PINNATE	
COLOR: US: DARK GREEN	SHAPE: OVATE	
LS: LIGHT GREEN	MARGIN: ENTIRE	
TEXTURE: US: SMOOTH	APEX: ACUTE	
LS: SMOOTH	LEAF BASE: ATTENUATE	
	PETIOLE: SHORT	
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE: 2-4 CM	Type: SUBTERMINAL PANNICLE	Fragrant: YES
Fruit	Type: BERRY	Color
SIZE:	Edible	Fruiting season
Growth	Rate: FAST	Longevity: 50 YEARS

ECOLOGY

Climate	Temperature: -2ºC	Drought resistant: MODERATE
ALTITUDE: 0-300	Sun exposure: SUN	Frost resistant: LIGHT
IRRIGATION: MODERATE		
Soil	Texture: LOAMY/SANDY	Salt resistant: LOW
pH: 6.5-8	Drainage: GOOD	Lime resistant: MODERATE
FERTILITY: HARDY		

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPES:	YES	WALLS:	YES
POLLUTION:	MODERATE	CARPET:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUP:	YES	ISOLATED:	YES

POINTS OF INTEREST

Species native to China and the Himalayas but naturalized in the Mediterranean area. When growing on a wall, it usually forms a compact mass at the top of it. By tying down one of the main branches, it can be made to cover part of a wall. By placing it near a living or passage area, the intense aroma of its flowers will be better appreciated. Cultivated in a pot, it can be placed on terraces or porches. It requires little pruning however since the flowers appear mostly on stems from the previous year, it is advisable to prune at the end of flowering. This climber needs support.

SPACING: 3 M

PLANTING AND PLANT HEALTH

Plenty of sunshine will guarantee rich and abundant blooms. Although this species does not resist frost, it can recover when pruned. Propagation can be carried out in summer months by layering the branches or planting semi-woody cuttings.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X			X	X

Sowing Planting Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides Pesticides Fertilizers

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

LONICERA

Lonicera japonica

CLIMBER

MADRESELVA SPANISH | LLIGABOSC VALENCIAN | JAPANESE HONEYSUCKLE ENGLISH | CHÈVREFEUILEE DU JAPON FRENCH

STRUCTURE

Shape	Height	Diameter
TWINING CLIMBER	Up to 10 M	5 M
Texture	**Shade**	**Root**
MEDIUM	PARTIAL	SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	DIPSACALES
FAMILY:	CAPRIFOLIACEAE

VARIETIES

MORPHOLOGY

Stem	UNDERG	NO	WOODY	YES
	CREEPING	NO	CLIMBING	YES
Leaf	COMPOUND:	NO		
EVERGREEN	HARDNESS:	SOFT		
SIZE: 3-8 CM	ARRANGEMENT:	OPPOSITE		
	VENATION:	PINNATE		
	SHAPE:	OVAL		
COLOR: US:MID GREEN	MARGIN:	ENTIRE		
LS: LIGHT GREEN	APEX:	ACUTE		
TEXTURE: US: SMOOTH	LEAF BASE:	ATTENUATE		
LS: PUBESCENT	PETIOLE:	SHORT		
Flower	Type		Reproduction	
SIZE: 3-5 CM	HERMAPHRODITE		HERMAPHRODITE	
	Flowering		Fragrant	
			YES	
Fruit	Type		Color	
	BERRY		BLACK	
SIZE:	Edible		Fruiting season	
	TOXIC			
Growth	Rate		Longevity	
	FAST		25-50 YEARS	



ECOLOGY

Climate	Temperature	Drought resistant
	-3ºC; Z5; H5	MODERATE
ALTITUDE: 0-400	Sun exposure	Frost resistant
IRRIGATION: MODERATE	SUN/PARTIAL SHADE	LIGHT
Soil	Texture	Salt resistant
	LOAMY/SANDY	LOW
pH: 6.5-8	Drainage	Lime resistant
FERTILITY: MODERATE	MODERATE	MODERATE

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPE:	YES	WALLS:	YES
POLLUTION:	MODERATE	CARPET:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUP:	YES	ISOLATED:	YES

POINTS OF INTEREST

Native to East Asia. This species is very popular for its persistent and beautiful foliage and for its continuous and aromatic flowering. They are ideal to cover upper parts of walls only (not suitable for the entire wall), low roofs of auxiliary constructions, metal frameworks, lattices, trunks and slopes. To give it shape, pruning is recommended and is easily carried out by simply removing dead branches and by trimming overgrown shoots after flowering. It can also be pruned back to the stump when it gets too strong. This species needs support.

SPACING: 2.5 M

PLANTING AND PLANT HEALTH

They can be planted in the sun or in partial shade. In areas prone to frost, they should be arranged so that they do not receive the morning sun's rays. They require a normal irrigation programme. Propagation is carried out by woody cuttings at the end of autumn, or semi-woody in summer, and by seed.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
	X	X								X	X X X X X X

Sowing ☐ Planting ■ Pruning X ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ■ Pesticides ■ Fertilizers ■ ☐

COMMERCIALIZATION

Presentation(L)	Length (cm)	Topiary shape
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

MACFADYENA

CLIMBER

Macfadyena ungis-cati

PETEGLORIO (SPANISH) | VALENCIAN | CAT CLAW IVY (ENGLISH) | GRIFFE DE CHAT (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 5-12 M	Diameter: 5 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	SCROPHULARIALES
FAMILY:	BIGNONIACEAE

VARIETIES

MORPHOLOGY		
Stem	UNDERGR: NO; CREEPING: NO	WOODY: YES; CLIMBING: YES
Leaf	COMPOUND: NO; HARDNESS: SOFT; ARRANGEMENT: OPPOSITE; VENATION: PINNATE; SHAPE: OVATE; MARGIN: ENTIRE; APEX: ACUTE; LEAF BASE: ATTENUATE; PETIOLE: SHORT	
EVERGREEN; SIZE: 4-8 CM; COLOR: US:DARK GREEN, LS:LIGHT GREEN; TEXTURE: US:SMOOTH, LS:SMOOTH		
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE: 3-5 CM	Flowering	Fragrant: NO
Fruit	Type: CAPSULE	Color: BROWN
SIZE:	Edible: NO	Fruiting season
Growth	Rate: FAST	Longevity: 50 YEARS

ECOLOGY		
Climate	Temperature: -3ºC	Drought resistant: MODERATE
ALTITUDE: 0-300	Sun exposure: SUN	Frost resistant: LIGHT
IRRIGATION: MODERATE		
Soil	Texture: ALL TYPES	Salt resistant: LOW
pH: 6.5-8	Drainage: MODERATE	Lime resistant: MODERATE
FERTILITY: MODERATE		

USES				
Resistances		Applications		
COASTAL: MODERATE		SLOPES: NO	WALLS: NO	
POLLUTION: MODERATE		CARPET: NO	TRELLIS: YES	
WIND: MODERATE		GROUPS: NO	ISOLATED: NO	

POINTS OF INTEREST

Native to Mexico and Argentina. This climber grows rapidly (up to 8 m) or can hang down to form a type of golden tapestry. It needs support on fences and bars. It is an invasive species and climbs by means of foliar tendrils, triffids and hooks. If this occurs, its fleshy roots must be pulled up.

SPACING: 3 M

PLANTING AND PLANT HEALTH

In warm areas it functions as an evergreen plant. It requires full sun and withstands severly dry conditions. Once established, it is drought tolerate. This species grows well in any drained, mulched soil. To achieve an adequate structure, it must be pruned after flowering. Propagation by seed and cuttings.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
						X	X	X	X		

Sowing | Planting | Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides | Pesticides | Fertilizers

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30L)	125-150	

PARTHENOCISSUS

Parthenocissus tricuspidata

CLIMBER

PARRA VIRGEN (SPANISH) · VALENCIAN · JAPANESE CREEPER (ENGLISH) · VIGNE-VIERGE JAPONAISE (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 5-20 M	Diameter: 5-10 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	RHAMNALES
FAMILY:	VITACEAE

VARIETIES

MORPHOLOGY		
Stem	UNDERG: NO	WOODY: YES
	CREEPING: NO	CLIMBING: YES
Leaf	COMPOUND: NO	
DECIDUOUS	HARDNESS: SOFT	
SIZE: 5-20 CM	ARRANGEMENT: ALTERNATE	
	VENATION: PINNATE	
	SHAPE: LOBED	
COLOR: US:GREEN/RED LS:GREEN/RED	MARGIN: SERRATE	
	APEX: ACUTE	
TEXTURE: US: SMOOTH LS: SMOOTH	LEAF BASE: ATTENUATE	
	PETIOLE: SHORT	
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE:	Flowering:	Fragrant: NO
INFLORESCENCE IN CYMOSE		
Fruit	Type: BERRY	Color: BLACK/BLUE
SIZE: 6-8 MM	Edible	Fruiting season
Growth	Rate: FAST	Longevity: 100 YEARS

ECOLOGY		
Climate	Temperature: -10ºC	Drought resistant: MODERATE/HIGH
ALTITUDE: 0-1000	Sun exposure: SUN/SHADE	Frost resistant: MODERATE
IRRIGATION: MODERATE		
Soil	Texture: LOAMY/CLAYEY	Salt resistant: LOW
pH: 6.5-8	Drainage: MODERATE	Lime resistant: MODERATE
FERTILITY: FERTILE		

USES		
Resistances	Applications	
COASTAL: MODERATE	SLOPES: NO	WALLS: YES
POLLUTION: MODERATE	CARPET: NO	TRELLIS: YES
WIND: MODERATE	GROUPS: NO	ISOLATED: NO

POINTS OF INTEREST

Native to China, Japan and Korea. This species is widely used to completely cover the walls of houses. It can cover small auxiliary buildings, walls, trellises or any type of structure. This climber can also be a good carpet groundcover (in this case care must be taken to ensure that it does not climb up nearby trees or bushes). Although it is a self-adhesive climber, it requires initial support until suckers have sufficiently developed. The autumnal reddish color of its leaves is more intense in cold climates.

SPACING: 3-5M

PLANTING AND PLANT HEALTH

It prefers a fertile, permeable humus-rich soil. It requires a normal irrigation programme and is somewhat drought resistant. Hardy to humidity. Pruning can be carried out by removing unwanted or damaged growth. Propagation by cutting, seed and layering is very easy. Graft on *P. quinquefolia*.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X				

Sowing ☐ Planting ☐ Pruning X ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pesticides ☐ Fertilizers ☐

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

PLUMBAGO

Plumbago auriculata

CLIMBER

JAZMIN AZUL (SPANISH) | VALENCIAN | LEADWORT, SKYFLOWER (ENGLISH) | DENTELAIRE DU CAP (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 1-3 M	Diameter: 2-3 M
Texture: MEDIUM	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	PLUMBAGINALES
FAMILY:	PLUMBAGINACEAE

VARIETIES

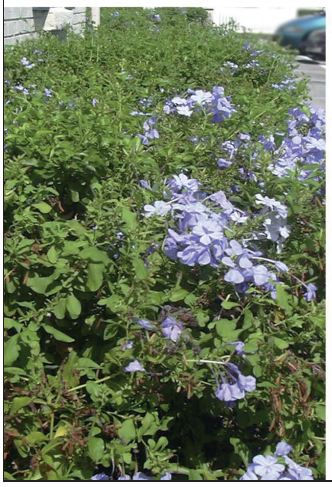
MORPHOLOGY		
Stem	UNDERG: NO; CREEPING: NO	WOODY: YES; CLIMBING: NO
Leaf	COMPOUND: NO; HARDNESS: SOFT; ARRANGEMENT: ALTERNATE; VENATION: PINNATE; SHAPE: OBLONG/SPATULATE; MARGIN: SMOOTH; APEX: ACUTE; LEAF BASE: ATTENUATE; PETIOLE: SHORT	
EVERGREEN; SIZE: 5-6 CM; COLOR: US:GREEN, LS:GREEN; TEXTURE: US:SMOOTH, LS:SMOOTH		
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE: 2.5-3 CM	Flowering: INFLORESCENCE IN RACEME	Fragrant: NO
Fruit	Type: CAPSULE	Color
SIZE:	Edible	Fruiting season
Growth	Rate: FAST	Longevity: 0-25 YEARS

ECOLOGY		
Climate	Temperature: -2ºC	Drought resistant: LOW
ALTITUDE: 0-300	Sun exposure: SUN/PARTIAL SHADE	Frost resistant: LIGHT
IRRIGATION: MODERATE		
Soil	Texture: ALL TYPES	Salt resistant: LOW
pH: 6.5-8	Drainage: HIGH	Lime resistant: MODERATE
FERTILITY: MODERATE		

USES				
Resistances		Applications		
COASTAL: MODERATE		SLOPES: YES	WALLS: NO	
POLLUTION: MODERATE		CARPET: NO	TRELLIS: NO	
WIND: MODERATE		GROUPS: YES	ISOLATED: YES	








POINTS OF INTEREST

Commonly known as Leadwort, this species of Jasmine is native to South Africa (The Cape), Southeast Asia and the Malay Archipelago. It is widely as a shrub for enclosures and to cover fences due to its profuse flowering. The root contains juices that can be used against bad teeth and inflammation of the gums. It needs protection and support. The scientific name *Plumbago* is of uncertain origin; some attribute it to the leaden color of the flowers of some species, while others derive it from the Latin word *plumbum* which means lead, since these plants can contribute to a valuable medicine against poisoning caused by lead fumes.

SPACING: 2 M

PLANTING AND PLANT HEALTH

Since it is a warm temperate shrub it is sensitive to cold. When exposed to full sun it requires fertile, rich and well-drained soils. In poor soils, light shade is advisable. It requires a high irrigation programme during growth and low when dormant. It is hardy to humidity and light and requires annual pruning. Once it has flowered, it is convenient to cut the flowering stems. It blooms more intensely when exposed to full sun. It propagates by cuttings from non-flowering shoots in the summer and at approximately 18ºC.

CHROMATIC CALENDAR

Foliage, Floration and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X							X	X

Sowing | Planting | Pruning (X)

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides | Pesticides | Fertilizers

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

SOLANDRA

Solandra maxima

CLIMBER

SOLANDRA (SPANISH) · VALENCIAN · CUP OF GOLD VINE (ENGLISH) · LIANE TROMPETTE (FRENCH)

STRUCTURE

Shape	Height	Diameter
SARMENTOSE	3-5 M	3 M
Texture	**Shade**	**Root**
FINE	LIGHT/PARTIAL	SCATTERED

DIVISION: PHANEROGAMS
SUBDIVISION: ANGIOSPERMS
TYPE: DICOTYLEDONS
ORDER: POLEMONIALES
FAMILY: SOLANACEAE

VARIETIES

MORPHOLOGY

Stem
UNDERGR NO · WOODY YES
CREEPING NO · CLIMBING YES

Leaf
EVERGREEN
SIZE: UP TO 15CM
COLOR: US:DARK GREEN LS:LIGHT GREEN
TEXTURE: US:SMOOTH LS:SMOOTH

COMPOUND:	NO
HARDNESS:	CORACIOUS
ARRANGEMENT:	PETIOLED
VENATION:	PINNATE
SHAPE:	ELLIPTICAL
MARGIN:	SMOOTH
APEX:	ACUTE
LEAF BASE:	ATTENUATE
PETIOLE:	SHORT

Flower
SIZE: 20 CM

Type	Reproduction
HERMAPHRODITE	HERMAPHRODITE
Flowering	**Fragrance**
	AT NIGHT

Fruit
SIZE:

Type	Color
BERRY	WHITE/PALE YELLOW
Edible	**Fruiting season**
TOXIC	

Growth

Rate	Longevity
MEDIUM	0-25 YEARS

ECOLOGY

Climate
ALTITUDE: 0-200
IRRIGATION: MODERATE

Temperature	Drought resistant
0ºC; H5; Z6	MODERATE
Sun exposure	**Frost resistant**
SUN/PARTIAL SHADE	LOW

Soil
pH: 6.5-7.5
FERTILITY: MODERATE

Texture	Salt resistant
LOAMY	LOW
Drainage	**Lime resistant**
MODERATE	MODERATE

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPES:	NO	WALLS:	YES
POLLUTION:	MODERATE	CARPET:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUPS:	YES	ISOLATED:	YES

POINTS OF INTEREST

Commonly known as cup of gold. This species of climber is native to Mexico. In warm climates its leaves are persistantly green. When trimmed, the glossy foliage is the perfect contrast to the large trumpet-shaped flowers that appear in winter and summer.

SPACING: 2 M

PLANTING AND PLANT HEALTH

This species has low resistant to cold temperatures (minimum 10ºC). It needs full sun and fertile, well-drained soil. It needs a high irrigation programme during the summer months. It needs to be tied down to some kind of support. Prune bushy branches after flowering. It is propagated by semi-ripe cuttings in the summer.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X					

Sowing ☐ Planting ☐ Pruning X ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pesticides ☐ Fertilizers ☐ ☐

COMMERCIALIZATION

Presentation(L)	Length (cm)	Topiary shape
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

SOLANUM

CLIMBER

Solanum jasminoides

DULCAMARA (SPANISH) | VALENCIAN | POTATO VINE (ENGLISH) | MORELLE FAUX JASMIN (FRENCH)

STRUCTURE		
Shape: SARMENTOSE	Height: 5-8 M	Diameter: 5 M
Texture: FINE	Shade: PARTIAL	Root: SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	POLEMONIALES
FAMILY:	SOLANACEAE

VARIETIES

MORPHOLOGY		
Stem	UNDERG: NO; CREEPING: NO	WOODY: YES; CLIMBING: YES
Leaf SEMI - PERSISTENT; SIZE: 3-7 CM; COLOR: US:DARK GREEN, LS:DARK GREEN; TEXTURE: US: SMOOTH, LS: SMOOTH	COMPOUND: NO; HARDNESS: SOFT; ARRANGEMENT: ALTERNATE; VENATION: PINNATE; SHAPE: OVAL-LANCEOLATE; MARGIN: SMOOTH; APEX: ACUTE; LEAF BASE: ATTENUATE; PETIOLE: SHORT	
Flower SIZE: 2.5 CM	Type: HERMAPHRODITE; Flowering: INFLORESCENCE IN CYMOSE	Reproduction: HERMAPHRODITE; Fragrant: NO
Fruit SIZE:	Type: BERRY; Edible	Color: PURPLE; Fruiting season: SEPT-NOV
Growth	Rate: FAST	Longevity: 0-25 YEARS

ECOLOGY		
Climate ALTITUDE: 0-200; IRRIGATION: MODERATE	Temperature: 0ºC; Sun exposure: PARTIAL SHADE	Drought resistant: MODERATE; Frost resistant: LOW
Soil pH: 6.5-7.5; FERTILITY: MODERATE	Texture: LOAMY/SANDY; Drainage: MODERATE	Salt resistant: LOW; Lime resistant: MODERATE

USES		
Resistances: COASTAL: MODERATE; POLLUTION: MODERATE; WIND: MODERATE	Applications: SLOPES: NO; CARPET: NO; GROUPS: NO	WALLS: YES; TRELLIS: YES; ISOLATED: NO





POINTS OF INTEREST

Native to Brazil. The potato vine is a very decorative climber species which produces purple fruit berries in autumn. If left to grow freely, it will form a large creeping bush or perch on other hardier bushes. It is much more conspicuous if grown on a sunny wall, a screen or a trellis; in this way, its large flower clusters will be more impressive.

SPACING: 3 M.

PLANTING AND PLANT HEALTH

The potato vine is sensitive to frost and therefore warm temperatures are ideal. It prefers well-drained, fertile and light soils. It is resistant to drought but requires a high irrigation programme watering at the time of flowering. The shoots are pruned and cut in spring (although not always necessary). Propagation can be carried out by semi-woody cuttings in summer and by layering.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
			X	X	X						

Sowing | Planting | Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides | Pesticides | Fertilizers

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shape
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

TECOMARIA

Tecomaria capensis

CLIMBER

BIGNONIA ROJA (SPANISH) · VALENCIAN · CAPE HONEYSUCKLE (ENGLISH) · BIGNONE DU CAP (FRENCH)

STRUCTURE

Shape	Height	Diameter
SEMI-SARMENTOSE	3 M	2 M
Texture	**Shade**	**Root**
FINE	PARTIAL	SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	SCROPHULARIALES
FAMILY:	BIGNONIACEAE

VARIETIES

MORPHOLOGY

Stem

UNDERG	NO	WOODY	YES
CREEPING	NO	CLIMBING	SEMI

Leaf

EVERGREEN

SIZE: 10-16 CM

LEAFLETS:5-11

COLOR: US: DARK GREEN

LS: DARK GREEN

TEXTURE: US:SMOOTH

LS:SMOOTH

COMPOUND:	IMPARIPINNATE
HARDNESS:	SOFT
ARRANGEMENT:	OPPOSITE
VENATION:	PINNATE
SHAPE:	OVATE
MARGIN:	SERRATE
APEX:	ACUTE
LEAF BASE:	ATTENUATE
PETIOLE:	SHORT

Flower

SIZE: 5 CM

INFLORESCENCE IN RACEMES

Type	Reproduction
HERMAPHRODITE	HERMAPHRODITE
Flowering	**Fragrant**
	NO

Fruit

SIZE:

Type	Color
CAPSULES	
Edible	**Fruiting season**

Growth

Rate	Longevity
MEDIUM	0-25 YEARS

ECOLOGY

Climate

ALTITUDE: 0-200

IRRIGATION: MODERATE

Temperature	Drought resistant
0ºC	MODERATE
Sun exposure	**Frost resistant**
SUN	LOW

Soil

pH: 6.5-7.5

FERTILITY: MODERATE

Texture	Salt resistant
LOAMY	LOW
Drainage	**Lime resistant**
MODERATE	MODERATE

USES

Resistances		Applications			
COASTAL:	MODERATE	SLOPES:	NO	WALLS:	YES
POLLUTION:	MODERATE	CARPETS:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUPS:	YES	ISOLATED:	NO

POINTS OF INTEREST

Commonly known as red bignonia. This speices is native to South Africa. It is a semi-climbing shrub that is easy to grow in large pots. If supported, it makes for a good climber. In various Indian tribes and in Mexico, tecomaria flowers are used as ornaments during some religious ceremonies or on occasions of marriage or magical initiation rites.

SPACING: 2 M

PLANTING AND PLANT HEALTH

Adapted to warm climates, it does well in coastal areas. It is hardy to soils but prefers well-drained and light ones. It requires a high irrigation programme in the summer and moderate to high humidity. Pruning must be very light in order to clean and eliminate any unwanted branches. Propagation by seed, cuttings from parched branches or layering. Graft on root of *Campsis radicans* (the trumpet vine).

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting Season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X					

Sowing ☐ Planting ☐ Pruning X ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pesticides ☐ Fertilizers ☐ ☐

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shaoes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

VITIS *Vitis vinifera*

CLIMBER

PARRA SPANISH | PARRA VALENCIAN | GRAPE VINE ENGLISH | VIGNE FRENCH

STRUCTURE

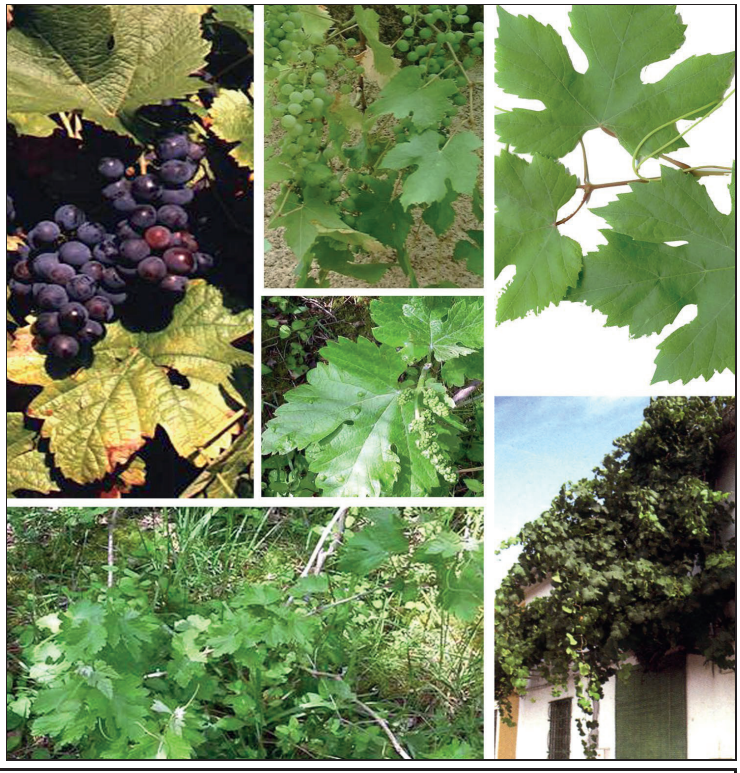
Shape	Height	Diameter
SARMENTOSE	Up to 20 M	10 M
Texture	**Shade**	**Root**
FINE	PARTIAL	SCATTERED

DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	FABALES
FAMILY:	LEGUMINOSAE

VARIETIES

MORPHOLOGY

Stem	UNDERG NO	WOODY YES
	CREEPING NO	CLIMBING YES
Leaf	COMPOUND: NO	
DECIDUOUS	HARDNESS: SOFT	
SIZE: 7-15 M	ARRANGEMENT: ALTERNATE	
	VENATION: PALMATE	
	SHAPE: LOBED	
COLOR: US:GREEN	MARGIN: DENTATE	
LS:GREEN	APEX: ACUTE	
TEXTURE: US:SMOOTH	LEAF BASE: CORDATE	
LS:TOMENTOSE	PETIOLE: SHORT	
Flower	Type: HERMAPHRODITE	Reproduction: HERMAPHRODITE
SIZE:	Flowering: INFLORESCENCE IN RACEME	Fragrant: NO
Fruit	Type: BERRY	Color: GREEN/BLACK
SIZE:	Edible: YES	Fruiting season: SEPT-OCT
Growth	Rate: FAST	Longevity: 120 YEARS



ECOLOGY

Climate	Temperature: -10ºC	Drought resistant: HIGH
ALTITUDE: 0-1000	Sun exposure: SUN	Frost resistant: HIGH
IRRIGATION: MODERATE		
Soil	Texture: ALL TYPES	Salt resistant: LOW
pH: 7-8	Drainage: MODERATE	Lime resistant: MODERATE
FERTILITY: MODERATE		

USES

Resistances		Applications			
COASTAL:	LOW	SLOPES:	NO	WALLS:	YES
POLLUTION:	MODERATE	CARPETS:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUPS:	NO	ISOLATED:	NO

POINTS OF INTEREST

This vine is native to the Caspian Sea,West India and the Caucasus. They are ideal for decorating large walls, high trellises and branches of large trees. Vines, in addition to its food, have given rise to the typical trellises of Mediterranean gardens. It has numerous varieties that have been selected over centuries for cultivation.

SPACING: 3 M

PLANTING AND PLANT HEALTH

It requires warm and dry environments to grow normally. Low temperatures and persistent rains are unfavorable. Tolerates proximity to the sea. It is not very demanding in terms of soil, but light, rocky and well-drained ones are preferable. It requires a normal irrigation programme and excess moisture is not recommended. It must be pruned to obtain vigorous shoots. Propagation is by seed, cutting or grafting.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X				

Sowing | Planting | Pruning X

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides | Pesticides | Fertilizers

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

WISTERIA

Wisteria sinensis

CLIMBER

GLICINIA (SPANISH) | VALENCIAN | CHINESE WISTERIA (ENGLISH) | GLYCINE DE CHINE (FRENCH)

STRUCTURE

Shape	Height	Diameter
SARMENTOSE	5-10 M	5 M
Texture	**Shade**	**Root**
FINE	PARTIAL	SCATTERED

DIVISION

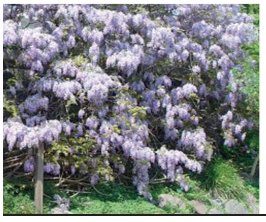
DIVISION:	PHANEROGAMS
SUBDIVISION:	ANGIOSPERMS
TYPE:	DICOTYLEDONS
ORDER:	FABALES
FAMILY:	LEGUMINOSAE

VARIETIES

MORPHOLOGY

Stem	UNDERG	NO	WOODY	YES
	CREEPING	NO	CLIMBING	YES
Leaf	COMPOUND:	YES. IMPARIPINNATE		
DECIDUOUS	HARDNESS:	SOFT		
SIZE: 30 CM	ARRANGEMENT:	OPPOSITE		
LEAFLETS:3-8 CM	VENATION:	PINNATE		
COLOR: US:GREEN	SHAPE:	LANCEOLATE		
LS:GREEN	MARGIN:	ENTIRE		
TEXTURE: US:SMOOTH	APEX:	ACUTE		
LS:SMOOTH	LEAF BASE:	ATTENUATE		
	PETIOLE:	SHORT		
Flower	Type	HERMAPHRODITE	Reproduction	HERMAPHRODITE
SIZE:	Flowering		Fragrant	NO
INFLORESCENCE IN RACEME (up to 60 cm)				
Fruit	Type	LEGUME	Color	WHITE/VIOLET/BLUE
SIZE:	Edible	NO	Fruiting season	
Growth	Rate	MEDIUM	Longevity	120 YEARS







ECOLOGY

Climate	Temperature	-5ºC	Drought resistant	MODERATE
ALTITUDE: 0-1000	Sun exposure	SUN/PARTIAL SHADE	Frost resistant	MODERATE
IRRIGATION: MODERATE				
Soil	Texture	LOAMY	Salt resistant	LOW
pH: 6.5	Drainage	MODERATE	Lime resistant	NO
FERTILITY: MODERATE				

USES

Resistances		Applications			
COASTAL:	LOW	SLOPES:	NO	WALLS:	YES
POLLUTION:	MODERATE	CARPETS:	NO	TRELLIS:	YES
WIND:	MODERATE	GROUPS:	NO	ISOLATED:	NO

POINTS OF INTEREST

Native to China and Japan. Wisteria can cover tops of walls, trellises, railings and trunks with their deciduous foliage. It is not advisable to plant them next to walls of houses as they usually get into drains and under the tiles. In order to prevent the wisteria from damaging the support, it is advisable to have hoops. The hanging flower clusters are spectacular. The yearly stems or shoots can grow considerably in thickness and length, which gives the plant a woody and solid appearance. It must be isolated on a trellis since another neighboring climber (even if it is less vigorous) can suffocate it. They cling to supports or man-made structures by counterclockwise-twining stems.

SPACING: 3 M

PLANTING AND PLANT HEALTH

Although this climbing species resists cold tempartures, it prefers temperate climates. It adapts to any garden soil but prefers consistent, fresh, drained and lime-free ones as it is sensitive to iron chlorosis. It requires a normal irrigation programme and moderate humidity. It is necessary to direct the young shoots so that they cover the desired areas and thye need to be pruned each year (generally last year's branches to within 10 cm of the junction with the oldest branch) to stimulate their flowering. As a result, a kind of corolla is formed, on which short and pointed branches develop that should not be pruned as they are floriferous. Conversely, long and sterile branches can be pruned.

CHROMATIC CALENDAR

Foliage, Flowering and Fruiting season

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Cultivation Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
X	X	X	X	X	X	X	X	X	X	X	X

Sowing ☐ Planting ☐ Pruning ☒ ☐

Treatment Calendar

JAN	FEB	MAR	ABR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Fungicides ☐ Pesticides ☐ Fertilizers ☐

COMMERCIALIZATION

Presentation (L)	Length (cm)	Topiary shapes
CT(5)	60-80	
CT(10)	80-100	
CT(30)	125-150	

Subchapter 7.3 Commercialization, use and planting

COMMERCIAL FORMATS OF CLIMBING AND SARMENTOSE PLANTS

The commercial formats of climbing and sarmentose plant relates to their height (Table 7.3.1) in the case of species or cultivars of erect bearing, and to the size in those of extended or horizontal bearing.

Height in cm
10/20
20/40
40/60
60/80
80/100
100/125
125/150
150/175
175/200
200/225
225/250

Table 7.3.1: Measurements to classify climbing and sarmentose plants according to their height when supplied (*Normas Tecnológicas de Jardinería y Paisajismo*. (C.I.T.A.P.A.C.))

ROOT FORMATS

The production of climbing and sarmentose plants in nurseries follows four procedures:

1. **Bare-root deciduous plants:** Once the propagation of the young plants has been completed, they are planted in the field. Once the desired formats and sizes have been achieved, they are uprooted and supplied in bare root form.

2. **Evergreen plants with root ball:** Once the propagation of the young plants has been completed, they are planted in the field. Once the desired formats and sizes have been achieved, they are uprooted and supplied in root ball form.

3. P**lants with mixed field/container cultivation:** After a first cycle corresponding to the propagation of the young plants, they are planted in the field. Once the desired formats and sizes have been achieved, they are uprooted and potted in a container. After a period of rooting and adaptation to the new environment, the plants are supplied for their commercialization.

4. **Container-grown plants:** After propagation, the young plants are potted in progressively larger containers, at least every one or two years depending on the container volume and the vigor and growth of the plant. Once the desired cultivated formats and sizes have been achieved, the plants are supplied for their commercialization.

When dealing with tap root species or varieties, care must be taken to ensure that the tap root has a length of about 20 cm on which sufficient secondary roots have been produced.

DECIDUOUS CLIMBING AND SARMENTOSE PLANTS SUPPLIED IN BARE ROOT

The root system must be consistent with a minimum size stipulated for the species or commercial variety. For example, a plant of 40/60 cm height should have a root system with a minimum diameter of 20/25 cm. Another plant measuring 80/100 cm should have a minimum width of 30 cm in its root system and a plant 125/150 cm tall should have a set of roots greater than 40 cm in diameter. The supply of bare root plants should be made from nurseries located in climates similar to where they will be planted.

Generally, bare-root climbing and sarmentose plants are supplied by grouping plants of the same format into homogeneous bundles containing 5 to 10 units.

EVERGREEN CLIMBING AND SARMENTOSE PLANTS SUPPLIED IN ROOT BALL

In the case of plants supplied with a root ball, the mass of soil should be homogeneous in quality and have no supplementary added substrate. The root balls will have a volume proportional to the aerial part of the plants and must be protected and wrapped with a biodegradable mesh that decomposes within 1.5 years of planting and tied with a similar degradable material. In the case of large specimens, the root ball must have a supplementary protection consisting of a non-galvanized metal mesh wrapper or reinforced plaster with non-galvanized mesh.

In the case of large specimens supplied bare root or with root ball, a record of how many times they have been root pruned must be made. This is an important indication of quality, especially in the case of plants with a taproot system where the longitudinal growth of the main root has been limited to ensure the development of secondary roots.

Evergreen climbing and sarmentose plant species should have been periodically root pruned at least every two or three years, depending on the species or commercial variety. This will ensure optimum conditions for the good rooting of the plant in the garden. At least one growing season should have elapsed between the last root pruning and the planting. The action of uprooting the plant prior to its commercialization should not be considered as root pruning.

Height of climbing plant in cm	Minimum diameter of root ball in cm	Minimum depth of root ball
20/40	20	15
40/60	20/25	15/20
60/80	25	20/30
80/100	25/30	25/30
100/125	30/35	25/30
125/150	35/40	30
150/175	40/45	30
175/200	45/50	35
200/225	50/55	35
225/250	55/60	40

Table 7.3.2: Recommended minimum diameter and depth of the root ball according to the height of the climbing and sarmentose plants when supplied. From N.T.J.P. (C.I.T.A.P.A.C.)

CLIMBING AND SARMENTOSE PLANTS SUPPLIED IN CONTAINERS

The production of plants in container eliminates the severe constraints of bare-root planting in winter and root ball planting in spring and fall, since container-produced plants can be planted practically any time of the year, except for the months with the highest evapotranspiration.

A good indication of quality containerized climbing plants is the absence of root spiraling since this hypogeal growth will impede the future development of the roots in the garden. In addition, roots that protrude from the container's drainage holes will affect future development as well as the use of pots or containers with non-degradable meshes, which in the latter case is unacceptable.

Minimum height of the plant in cm	Recommended minimum volume of container in liters	Upper and lower diameter of container in cm
20/40	1.5/2	15/16
40/60	2	16
60/80	3	18
80/100	3/5	18/22
100/125	5	22

Tabla 7.3.3: Minimum recommended volume of container in terms of height N.TJ.P. (C.I.T.A.P.A.C.)

SUBSTRATE

The substrate used in the production of containerized climbing and sarmentose plants must have a composition that does not create interfaces with undesirable water movement leading to serious excesses or defects in moisture in the root volume after planting.

In the case climbing and sarmentose plants growing in acid soils (e.g. *Wisteria*), a substrate with physical-chemical characteristics adapted to this type of plant must be applied.

The presence of evergreen weeds and mosses must be avoided and inspected at the source.

PLANT HEALTH

Irrespective of the species, the plants should show obvious health, as well as having a good development and a balanced and proportionate shape. Likewise, balance and proportion in the size of the root ball extracted or obtained in a container is required.

The plants should show no signs of diseases, pests, physiopathies, nutritional deficiencies or symptoms of phytotoxicity. Their trunks, stems and branches must be free of burns or wounds and no broken branches or buds must be observed. The roots must not show damage or rot.

The supplier must comply with the current legislation on plant health specially regarding harmful quarantine organisms and the required phytosanitary passport.

LABELLING AND DOCUMENTATION

The supplier must identify at least 5% of the plants in each lot with a durable label correctly and solidly attached to the plants or to the substrate, with indelible, visible characters, recording: its species and variety, the material used for rootstock and grafting, number of plants in the lot and its commercial format (total height and/or span and container volume, if applicable).

In addition, the supplied plants will be accompanied by a delivery note issued by the supplier in which the following **administrative information** will be indicated:

- Indication: "CEE quality"[1]
- Member State Code[1]
- Name or identification code of the responsible official body[1]
- Identification of the nursery or supplier (name and registration or authorization number)[2]
- Document issue date
- Individual serial or batch number
- Where applicable, Phytosanitary Passport number
- Where applicable, Ornamental Label
- In the case of imports from third countries, the name of the country of production
- The indication of the Technological Standard NTJ 07F: 1998 on a product represents the commitment by the producer that the product meets the requirements of the Technological Standard

[1] Only in the case of specifically regulated species or cultivars, which must comply with current legal regulations. If desired, this information can be printed on the delivery note.

[2] If desired, this information can be printed on the delivery note.

And the following technical information:

- Botanical name.
- Cultivar denomination.
- Number of plants.
- Presentation of the root system.
  - · Bare Root: BR
  - · Container: CT
  - · Pot: P
  - · Root ball: CE
  - · Gypsum root ball: CEY in Gypsum
  - · Root ball with metal mesh: RB - M.M.
- Total height and/or span, depending on the case.
- Stem height, in the case of tall plants.
- Volume or diameter of the container, indicating after the letter C (indicating container) the volume in liters, or designating behind the letter P (indicating pot) a figure indicating the upper and outer width of a square pot or the diameter top and outside of a round pot. In this second case, the letter "r" will be placed behind the number.

If the climbing plants supplied come from the forest or existing gardens, the extraction must have been carried out in accordance with the provisions of current legislation, and this origin must be recorded on the delivery note.

Additional important descriptions

- Denomination of the rootstock, if applicable.
- Sex, in the case of dioecious plants with interesting fruit.
- Number of trunks or main stems.
- Number of root prunes, if applicable.
- Presence of a leader, if applicable.
- Thinning, if applicable.
- Cutting back, if applicable.
- Approximate weight of the plant, counting that of the root ball and that of the container, if applicable.
- Last phytosanitary treatment carried out (active material and date).

The plantation framework (spacing) will depend on the adult size and vigor of the species or cultivar being used, the quality of the soil and other characteristics of the medium and cultivation.

Subchapter 7.4 Maintenance

FERTILIZER

Base dressing

Medium and large climbers and sarmentose plants

- Decorative for its foliage: 0.5 Kg/hole of 8-8-8 fertilizer
- Decorative for its flowering: 0.5 Kg/hole of 6-9-14 fertilizer

Fertilizing

Month	Types and doses
November	Organic material: 150 Kg/100m^2
March	Ammonium nitrate: 3Kg/100m^2
	Lime superphosphate: 2.5 Kg/100m^2
	Potassium superphosphate: 1.5 Kg/100m^2
May	Ammonium Nitrate: 1.5 Kg/100m^2
July	Lime superphospate: 2.5 Kg/100m^2
	Potassium sulphate: 1.5 Kg/100m^2
August	Ammonium nitrate: 1.5 Kg/100m^2

WATERING

The following table includes a guideline for Monthly Irrigation

Nº of watering	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		1	1	1	2	3	3	2	1			

Table 7.4.1: Monthly irrigation or climbing plants

Average dose: 5 liters of water per foot

PRUNING

This operation depends on the type of plants:

1. Climbers and sarmentose plants with deciduous leaves
2. Flowering climbers and sarmentose plants
3. Climbers and sarmentose plants with evergreen leaves

The specialist, once in the garden will study how the climbers and sarmentose plants need to be pruned, making a note of the number of old branches, suckers, interior branches, etc. Once analyzed, the removal of all the old branches can begin. This will ensure healthy vegetation.

When it comes to small and thin branches, hand shears are used. If cuts need to be made at great height, a long reach looper is used and if necessary, with extendable handles. When dealing with thick branches, a prune saw is used and if tears occur, they can be filed down.

Once the removal of old branches has been completed, the suckers can be removed. The purpose of this pruning is to maintain the vegetative balance of the climbers and sarmentose plants, preventing suckers from diminishing the plant's vigor.

Finally, the cutting of interior branches takes place to allow light and air to penetrate the entire plant and finally, the trimming of branches that "invade" other bushes or cover the visibility of lampposts, windows is carried out.

Once the pruning is finished, a fungicidal paint is applied to all the cuts with a diameter over 2 centimeters.

Green pruning is usually carried out every month and includes the removal of withered branches and flowers, at no time will severe pruning be carried out since it can damage the climber and sarmentose plants

Then the adjacent paths are swept, and the remains of the pruning are collected and taken directly to the landfill or left in piles that will later be collected and adequately disposed of.

PHYTOSANITARY TREATMENTS

The treatments are carried out at the times indicated below, with the consent of the owner and taking into consideration the the species, products, and methods (c.p. = commercial product).

March
Treatment against insects, mites and cryptogamic diseases.
- Abamectin: 0.35 cc/l c.p.
- Thiram 80%: 2.5 g/l

May
Treatment against wax scales, other insects and cryptogamic diseases.
- Metilpirimifos: 1.75 g/l c.p.
- Thiram 80%: 2.5 g/l c.p.

July
Treatment against sucking insects, chewing insects and mites.
- Fenvalerate: 0.75 cc/l p.c.
- Dienochlor: 0.9 g/l p.c.

September
Treatment against sucking insects, chewing insects and mites.
- Abamectina: 0.35 cc/l p.c.
- Thiram 80%: 2.5 g/l June:

December
Zineb 80%: 2.5 g/l p.c.

February
Zineb 80%: 2.5 g/l p.c.

The presence and symptoms of specific pests and diseases in some plants should be monitored throughout the year:

- Aphids/mites: Treat with Abamectin at 0.75 cc/l p.c. or with Ethiofencarb at 1 cc/l c.p.
- Powdery mildew: White spots on the leaves. Treat with Benomyl at 0.6 g/l as soon as it appears.
- Snails and slugs: Treat late in the day and water with Metaldehyde at a rate of 10-15 granules/m^2.
- Chlorosis (iron deficiency): Sequestrene 138 F at 3 g/m^2.

For the application of phytosanitary treatments, the following equipment can be used:

- Low toxicity phytosanitary product
- Wetting
- Small tank
- Vehicle for displacement
- Masks, aprons, forearm gloves, boots.

The treatment requires only one specialist/technician, who prepares the mixture in the tank or backpack and sprays the indicated species or specimens.

Phytosanitary treatments are preferably carried out during hours of minimal inconvenience, prior to notifying the owners or users of the green area.

WEEDING AND LIGHT DIGGING

This operation should be carried out throughout the year, at least once a month in autumn and winter and twice a month in spring and summer.

Material used: Baskets, hoes and rakes, curved knives, small sickles, and backpacks for herbicide treatments.

Weeding is carried out by lightly digging the soil surface, although sometimes it also includes mechanical means (low mowing) or chemical means (with non-toxic selective herbicides).

The superficial digging should be made between the plants forming a compact group using a hoe. At the same time, the remaining clods of soil should be crumbled and the weeds removed. When the entire clump is undercut, the soil should be leveled and raked so that the surface is uniform and free of stones or objects.

The weeds are then collected and disposed of. The operation ends with the transfer of the remains to the landfill.

MONTH	OPERATION
MARCH	Transplanting of bareroot plants Formative training / pruning
APRIL	Transplanting of evergreen species Fertilizing
MAY	Maintenance pruning
JUNE **JULY** **AUGUST**	Cut wilted spring flowers from climbing plants (head
OCTOBER **NOVEMBER**	Base dressing Maintenance pruning Transplanting of evergreen species
DECEMBER **JANUARY**	Transplanting and pruning weather permitting
FEBRUARY	Formative pruning and transplanting of deciduous species

Table 7.4.2: Calendar of annual operations

FREQUENCY

OPERATION	FREQUENCY		
Irrigation in planting beds		**1 Mar / 31 Oct**	**1 Nov / 28 Feb**
	Climbers and Sarmentose plants	3 times a week	Once a week
	Pots	3 times a week	Once a week
Base Dressing	Prior to any planting		
Renewal of substrate or ameliorations	As indicated D. T.		
Weeding or light digging	Once a month		
Fertilizing	**Spring and Autumn**	**Winter**	
	5-8 mineral substrates	1 organic substrate	
Replanting	Climbers and Sarmentose plants	As indicated by D. T.	
Formative pruning	Free shapes	Green pruning once a month	Formative pruning and rejuvenation: once as indicated by D.T.
	In rose bushes	Traditional pruning (topping and finishing) winter	Remove wilted flowers: spring, summer, and autumn
	In trained forms	Trimming: Once a month	2 trimmings as indicated by D.T.
Phytosanitary treatments	From April to November or as indicated by D.T.		
Herbicides	Monthly		

Table 7.4.3: Operations and frequencies (D.T.: technical director)

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