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This document contains the list of species most typically used in Mediterranean areas for agroforestry. Data are based on previous projects and represent a generic evaluation rather than outputs of specific sector studies.

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Table 1 - Average income (not profit) per hectare for selected products and species. Sorted by income level.

Species		What can we sell ? (main product)	Unit	Price/unit in EURO	Harvest/ha in same unit	Income/h a in EURO	First production year
Red currant	Ribes rubrum	Fruit/berries	KG	11,8	10.000	118.000	Year 4
Curry plant	Helichrysum italicum	Oils	LT	1280	50	64.000	year 2
Black currant	Ribes nigrum	Fruit/berries	KG	13,5	4.500	60.750	Year 4
Raspberry	Rubus idaeus	Fruit/berries	KG	7,0	6.600	46.200	Year 4
Blackberry	Rubus fruticosus	Fruit/berries	KG	8,7	5.000	43.500	Year 4
Blueberry	Vaccinium corymbosum	Fruit/berries	KG	6,0	6.400	38.400	Year 4
Winter savory	Satureja montana	Herbs	KG dry	15	2.500	37.500	Year 2
Caper bush	Capparis sp. Spinosa and others	Vegetables preserved in vinegar	KG	17	2.000	34.000	year 4
Asparagus (wild)	Asparagus sp (officinalis, albidus, aphyllus)	Vegetables	KG	4,8	6.400	30.720	Year 3
Laudanum/ rock rose/Jara	Cistus ladanifer	Essential oils	KG	1517	20	30.340	year 10
Mint	Salvia officinalis	Herbs	KG dry	13	2.000	26.000	Year 2
Hart's pennyroyal	Mentha sp.	Herbs	KG dry	6	4.000	24.000	Year 2
Mirabelle plum	Prunus insititia	Fruit	KG	1,0	20.000	20.000	year 6
Saffron crocus	Crocus sativus	Stigmas of the flowers (dry powder)	KG	1933	10	19.330	year 5
Loquat	Eriobotrya japonica	Fruit	KG	2	8.000	16.000	year 5

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<b>Lemon balm</b>	Melissa officinalis	Herbs	KG dry	8	2.000	16.000	Year 2
<b>Hyssop</b>	Hyssopus vulgaris	Herbs	KG dry	14,5	1.000	14.500	Year 2
<b>Oregano</b>	Origanum vulgare	Herbs	KG dry	14,2	1.000	14.200	Year 2
<b>St. John's Wort</b>	Hypericum perforatum/ perforatum	Herbs	KG	26	500	13.000	year 5
<b>Sicilian Sumac/ Sommacco</b>	Rhus coriaria	Crushed fruits/ spice	KG	6,8	1.850	12.580	year 4
<b>Fig tree</b>	Ficus carica (and other spp)	Figs	KG	5,8	2.000	11.600	year 4
<b>Portuguese oak</b>	Quercus faginea	Timber	M3	110	100	11.000	year 70
<b>Sea buckthorns</b>	Hippophae rhamnoides	Berries	KG	5,0	2.000	10.000	year 10
<b>Dragon fruit/ Pitahayas</b>	Hylocereus spp.	Fruits	KG	2	5.000	10.000	year 5
<b>Avocado</b>	Persea Americana	Fruit	KG	2	5.000	10.000	year 5
<b>Stone pine</b>	Pinus pinea	Nut-kernel	KG	25,7	350	8.995	year 20
<b>Kiwifruit</b>	Actinidia spp (deliciosa)	Fruits	KG	2,2	4.000	8.800	year 6
<b>Pot Marigold</b>	Calendula officinalis	Seeds/oils	LT	88	100	8.800	year 2
<b>Rosmary</b>	Rosmarinus officinalis	Herbs	KG dry	14,2	600	8.520	Year 2
<b>Olives</b>	Olea europaea sylvestris	Fruit	KG	2,1	4.000	8.400	
<b>Lovage</b>	Levisticum officinale	Herbs	KG dry	8	1.000	8.000	Year 3
<b>Pistachio, Localized variety</b>	Pistacia lentiscus and other spp	Nut	KG	7,2	850	6.120	year 8
<b>Common hazel nut</b>	Corylus avellana	Nuts	KG	3,0	2.000	6.000	Year 4
<b>Giant Cane</b>	Arundo donax	Biomass	ton dry	132,0	40	5.280	year 10
<b>Blackthorn/ Sloe</b>	Prunus spinosa	Berries	KG	5,0	1.000	5.000	Year 4
<b>Thyme</b>	Thymus sp	Herbs	KG dry	2,5	2.000	5.000	Year 2



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<b>Lemon Verbena</b>	Aloysia citrodora	Herbs	KG dry	3,5	1.300	4.550	Year 2
<b>Grey alder</b>	Alnus Incana	Timber	M3	45	100	4.500	year 70
<b>Common hawthorn</b>	Crataegus Monogyna (or other spp)	Berries	KG	4	1.000	4.000	Year 5
<b>Southern tea tree</b>	Lycium intricatum	Fruit/ berries	KG	4,0	1.000	4.000	Year 5
<b>Myrtle</b>	Myrtus communis	Berries (for liqueur)	KG	4,0	1.000	4.000	Year 5
<b>Narrow-leaved mock privet/ green olive tree</b>	Phillyrea angustifolia or latifolia	Medicinal fruits	KG	4,0	1.000	4.000	Year 5
<b>Poplar</b>	Populus spp	Timber	M3	40	100	4.000	year 30
<b>Retama</b>	Retama sphaerocarpa	Medicinal fruits (and brooms)	KG	4,0	1.000	4.000	Year 5
<b>Mediterranean buckthorn (mock privet)</b>	Rhamnus alaternus/ lycioides	Medicinal fruits	KG	4,0	1.000	4.000	Year 5
<b>Dog rose</b>	Rosa canina	Medicinal fruits	KG	4,0	1.000	4.000	Year 5
<b>Wild blackberry</b>	Rubus ulmifolius	Berries	KG	4,0	1.000	4.000	Year 5
<b>Butcher's-broom</b>	Ruscus aculeatus	Medicinal fruits	KG	4,0	1.000	4.000	Year 5
<b>Field Elm</b>	Ulmus minor	timber	M3	40	100	4.000	year 30
<b>Prickly pear</b>	Opuntia ficus-India	Fruits	KG	1,2	3.000	3.600	Year 5
<b>Walnut</b>	Juglans regia	Nuts	KG	3,5	1.000	3.500	year 6
<b>Apricot</b>	Prunus armenaica	Fruit	KG	0,8	4.000	3.200	year 5
<b>Carob tree</b>	Ceratonia siliqua	Fruits (dried pots)	KG	1	2.700	2.700	year 8
<b>Cork oak</b>	Quercus suber	Cork	KG	1,3	2.000	2.600	year 25
<b>Pomegranate</b>	Punica granatum	Fruits	KG	1,0	2.500	2.500	year 6
<b>Almond</b>	Prunus dulcis	Nut	KG	3,5	700	2.450	year 6



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<b>Lavender</b>	Lavandula angustifolia, or Lavandula luisieri	Herbs	KG dry	3	750	2.250	Year 2
<b>Chestnut</b>	Castanea sativa	Nut	KG	2	1.100	2.200	year 18
<b>Hemp</b>	Cannabis sativa	Hemp fibre	ton dry	210,0	10	2.100	year 2
<b>Azarole</b>	Crataegus azarolus	Berries	KG	1,95	900	1.755	Year 5
<b>Quince</b>	Cydonia oblonga	Fruits	KG	0,7	2.400	1.680	year 8
<b>Strawberry tree (Medronho)</b>	Arbutus unedo (or andrachne for ITA)	Fruits (madrones)	KG	1,26	900	1.134	year 8
<b>Iberian pear</b>	Pyrus bourgeana	Fruits	KG	1,16	780	905	year 8
<b>Aloe vera</b>	Aloe vera	Leaves	KG	0,028	30.000	840	Year 3
<b>Allepo Pine</b>	Pinus halepensis	Resin	KG	1,1	750	825	year 24
<b>Maritime pine</b>	Pinus pinaster	Resin	KG	1,1	750	825	year 24
<b>Common Juniper</b>	Juniperus communis	Medicinal berries/oil	KG	4,0	200	800	year 10
<b>Juniper</b>	Juniperus navicularis	Medicinal berries/oil	KG	4,0	200	800	year 10
<b>Phoenician juniper</b>	Juniperus phoenicea	Medicinal berries/oil	KG	4,0	200	800	year 10
<b>Juniper</b>	Juniperus turbinata	Medicinal berries/oil	KG	4,0	200	800	year 10
<b>Black alder</b>	Alnus glutinosa	Biomass	ton dry	132,0	6	792	year 8
<b>Mediterranean saltbush</b>	Atriplex halimus	Fodder	KG	0,08	3.000	240	year 4
<b>European nettle tree</b>	Celtis australis	Fodder	KG	0,08	3.000	240	year 4
<b>Tagasaste / tree lucerne</b>	Cytisus proliferus	Fodder	KG	0,08	3.000	240	year 4
<b>Narrow-leaved ash</b>	Fraxinus angustifolia	Fodder	KG	0,08	3.000	240	year 4
<b>Sulla</b>	Hedysarum coronarium	Fodder	KG	0,08	3.000	240	year 4
<b>Moon trefoil/tree medick</b>	Medicago arborea	Fodder	KG	0,08	3.000	240	year 4



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<b>Mulberry</b>	Morus alba	Forage (leaves)	KG	0,08	3.000	240	year 4
<b>Princesstree</b>	Paulownia Tomentosa	Fodder	KG	0,08	3.000	240	year 4
<b>Oats</b>	Avena	Agricultural crop	KG	0,12	1.890	227	year 1
<b>Kermes oak / Coscojas</b>	Quercus coccifera	Acorns	KG	0,25	400	100	Year 20
<b>Holm (stone) oak</b>	Quercus rotundifolia (ilex rotundifolia)	Acorns	KG	0,25	400	100	Year 20
<b>Lolium</b>	Lolium rigidum	Forage	KG	0,05	1.890	95	year 1
<b>Subterranean clover</b>	Trifolium subterraneum (and other spp)	Forage	KG	0,05	1.890	95	year 1

Table 2- Commercial species list with potential products to sell among those commonly used in Mediterranean areas. Sorted by Latin name.

Common Name	Latin Name	Type	Main products to use or sell			Additional climate & DAM characteristics			
Kiwifruit	Actinidia spp (deliciosa)	shrub	Fruits						Direct income source
Black alder	Alnus glutinosa	tree	Biomass			Riverbanks fixing	Natural. Fence (no thorns)	N-Fix	Direct income source
Grey alder	Alnus Incana	tree	timber			N-Fix	Riverbanks fixing		Direct income source
Aloe vera	Aloe vera	plant	Oils						Direct income source
Lemon Verbena	Aloysia citrodora	aromatics	Herbs	oils					Direct income source
Rope grass/ Ampelodesmos	Ampelodesmos mauritanicus	grass	Natural engineering	fibre/ paper		Erosion control			Less costs
Stinking Bean Trefoil	Anagyris foetida	shrub	NA			Good climate adaptation	Erosion control	N-Fix	Less costs
Strawberry tree (Medronho)	Arbutus unedo (or andrachne for ITA)	tree	Fruit	timber		Good climate adaptation	Tolerate atmospheric pollution		Direct income source
Giant Cane	Arundo donax	cane	Construction material	Biomass		Riverbanks fixing		Invasive	Less costs
Asparagus (wild)	Asparagus sp (officinalis, albidus, aphyllus)	plant	vegetable						Direct income source
Mediterranean saltbush	Atriplex halimus	shrub	Fodder			Erosion control	salt-excreting		Less costs
Oats	Avena	cereal	Fodder	cereals					Less costs
Pot Marigold	Calendula officinalis	Plant	Seeds/oils			Interesting for biodiv.			Direct income source

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Summer heather	Calluna vulgaris	Plant	NA			Erosion control	Interesting for biodiv.		Less costs
Hemp	Cannabis sativa	plant	Hemp fibre						Direct income source
Caper bush	Capparis sp. Spinosa and others	plant	Vegetables preserved in vinegar			Good climate adaptation			Direct income source
Chestnut	Castanea sativa	tree	Nuts	timber	flour				Direct income source
European nettle tree	Celtis australis	tree	Fodder	timber		Important for biodiv.	Good climate adaptation		Less costs
Carob tree	Ceratonia siliqua	tree	Fruit	Gum	timber	Good climate adaptation	N-Fix		Direct income source
Laudanum/ rock rose/Jara	Cistus ladanifer	shrub	Resin or oil	Mushrms	liquor				Direct income source
Common hazel nut	Corylus avellana	shrub	Nuts			Important for biodiv.			Direct income source
Azarole	Crataegus azarolus	shrub	Fruit/ berries			N. Fence (thorns)	Tolerate atmospheric pollution		Direct income source
Common hawthorn	Crataegus Monogyna (or other spp)	shrub	Fruit/ berries			Important for biodiv.	Nurse shrub (thorns)	Tolerate atmospheric pollution	Direct income source
Saffron crocus	Crocus sativus	plant	Stigmas of the flowers (dry powder)						Direct income source
Quince	Cydonia oblonga	tree	Fruit	Gum	Pectin	N. Fence (no thorns)			Direct income source
Tagasaste / tree lucerne	Cytisus proliferus	shrub	Fodder			N-Fix	Tolerate atmospheric pollution		Less costs
Portuguese broom	Cytisus striatus	shrub	Fibres	vegetables		N-Fix	Important for biodiv.	Can be Invasive	Direct income source
Loquat	Eriobotrya japonica	shrub	Fruit						Direct income source
Ferula/Giant Fennel	Ferula communis	plant	Gum	Fibres					Market under development
Fig tree	Ficus carica (and other spp)	tree	Fruit						Direct income source



# REPLICATION TOOLKIT

Narrow-leafed ash	Fraxinus angustifolia	tree	Fodder			Riverbanks fixing	Tolerate atmospheric pollution		Less costs
Broom	Genista falcata/ lusitanica	Plant	NA			Erosion control	Interesting for biodiv.		Less costs
Sulla	Hedysarum coronarium	plant	Fodder			N-Fix	Erosion control	Good climate adaptation	Less costs
Curry plant	Helichrysum italicum	Plant	Oils			Good climate adaptation			Direct income source
Sea buckthorns	Hippophae rhamnoides	shrub	Fruit/ berries			Erosion control	N-Fix		Direct income source
Dragon fruit/ Pitahayas	Hylocereus spp.	Plant	Fruits					Can be Invasive	Direct income source
St. John's Wort	Hypericum perforatum/ perforatum	Plant	Herbs			Interesting for biodiv.			Direct income source
Hyssop	Hyssopus vulgaris	aromatics	Herbs	oils					Direct income source
Walnut	Juglans regia	tree	Nuts	oil	timber				Direct income source
Common Juniper	Juniperus communis	shrub	Fruit/ berries	oil		Erosion control			Direct income source
Juniper	Juniperus navicularis	shrub	Fruit/ berries	oil		Erosion control			Direct income source
Phoenician juniper	Juniperus phoenicea	shrub	Fruit/ berries	oil		Erosion control			Direct income source
Juniper	Juniperus turbinata	shrub	Fruit/ berries	oil		Erosion control			Direct income source
Lavender	Lavandula angustifolia, or Lavandula luisieri	aromatics	Herbs	oils		Good climate adaptation			Direct income source
Lovage	Levisticum officinale	aromatics	Herbs	oils					Direct income source
Lolium	Lolium rigidum	grass	Fodder						Less costs
Southern tea tree	Lycium intricatum	shrub	Fruit/ berries			N. Fence (thorns)	Erosion control		Direct income source
Albardine, esparto grass	Lygeum spartum	grass	Natural engineering	fibre/ paper		Erosion control			Less costs

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<b>Moon trefoil/tree medick</b>	Medicago arborea	shrub	Fodder			N-Fix			Direct income source
<b>Lemon balm</b>	Melissa officinalis	aromatics	Herbs	oils					Direct income source
<b>Hart's pennyroyal</b>	Mentha sp.	aromatics	Herbs	oils					Direct income source
<b>Mulberry</b>	Morus alba	tree	Fodder	fruits					Less costs
<b>Myrtle</b>	Myrtus communis	shrub	Fruit/ berries	oils					Direct income source
<b>Olives</b>	Olea europaea sylvestris	tree	Fruit			Important for biodiv.			Direct income source
<b>Prickly pear</b>	Opuntia ficus-India	cactus	Fruits			N. Fence & FIRE buffer (thorns)	Good climate adaptation	Invasive in some countries	Direct income source
<b>Oregano</b>	Origanum vulgare	aromatics	Herbs	oils					Direct income source
<b>Princesstree</b>	Paulownia Tomentosa	tree	Fodder	Medicin	Biomass	N-Fix C4	survives after burning	Can be Invasive	Less costs
<b>Avocado</b>	Persea Americana	Tree	Fruit						Direct income source
<b>Narrow-leaved mock privet/ green olive tree</b>	Phillyrea angustifolia or latifolia	shrub	Fruit	Charcoal		Important for biodiv.	N. Fence (no thorns)		Direct income source
<b>Allepo Pine</b>	Pinus halepensis	tree	Turpentine	timber					Direct income source
<b>Maritime pine</b>	Pinus pinaster	tree	Resin	mushrms	timber				Direct income source
<b>Stone pine</b>	Pinus pinea	tree	Nuts	mushrms	timber/ resins	Good climate adaptation			Direct income source
<b>Pistachio, Localized variety</b>	Pistacia lenstiscus and other spp	tree	Nuts	oil		Important for biodiv.			Direct income source
<b>Poplar</b>	Populus spp	Tree	Timber						Direct income source
<b>Apricot</b>	Prunus armenaica	Tree	Fruit						Direct income source
<b>Almond</b>	Prunus dulcis	tree	Nuts	Oils					Direct income source

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Mirabelle plum	Prunus insititia	tree	Fruit			Good climate adaptation			Direct income source
Blackthorn/ Sloe	Prunus spinosa	shrub	Fruit/ berries			N. Fence (thorns)			Direct income source
Pomegrenade	Punica granatum	tree	Fruit			N. Fence (no thorns)			Direct income source
Iberian pear	Pyrus bourgeana	tree	Fruits			Important for biodiv.			Direct income source
Kermes oak / Coscojas	Quercus coccifera	tree	acorn			Good climate adaptation			Direct income source
Portuguese oak	Quercus faginea	tree	timber	acorn		Important for biodiv.			Direct income source
Holm (stone) oak	Quercus rotundifolia (ilex rotundifolia)	tree	Acorn	timber	truffle	N. Fence (no thorns)			Direct income source
Cork oak	Quercus suber	tree	Cork	acorn	timber				Direct income source
Retama	Retama sphaerocarpa	shrub	Fruit/ berries			Nurse shrub (no thorns)	Good climate adaptation	N-Fix C4	Direct income source
Mediterranean buckthorn (mock privet)	Rhamnus alaternus/ lycioides	shrub	Fruit/ berries			N. Fence (no thorns)			Direct income source
Sicilian Sumac/ Sommacco	Rhus coriaria	shrub	Crushed fruits/ spice						Direct income source
Black currant	Ribes nigrum	shrub	Fruit/ berries			Interesting for biodiv.			Direct income source
Red currant	Ribes rubrum	shrub	Fruit/ berries			Interesting for biodiv.			Direct income source
Dog rose	Rosa canina	shrub	Fruit/ berries			N. Fence (thorns)			Direct income source
Rosmary	Rosmarinus officinalis	aromatics	Herbs	oils					Direct income source
Blackberry	Rubus fruticosus	shrub	Fruit/ berries			Interesting for biodiv.			Direct income source
Raspberry	Rubus idaeus	shrub	Fruit/ berries			Interesting for biodiv.			Direct income source
Wild blackberry	Rubus ulmifolius	shrub	Fruit/ berries						Direct income source
Butcher's-broom	Ruscus aculeatus	shrub	Fruit/ berries						Direct income source



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# REPLICATION TOOLKIT

<b>Saltworth</b>	Salsola oppositifolia	Plant	NA			Erosion control	Good climate adaptation		Less costs
<b>Mint</b>	Salvia officinalis	aromatics	Herbs	oils					Direct income source
<b>Winter savory</b>	Satureja montana	aromatics	Herbs	oils					Direct income source
<b>Spanish Broom</b>	Spartium junceum	Shrub	NA			Erosion control	Good climate adaptation		Less costs
<b>Thyme</b>	Thymus sp	aromatics	Herbs	oils					Direct income source
<b>Subterranean clover</b>	Trifolium subterraneum (and other spp)	clover	Fodder			N-Fix C4			Less costs
<b>Field Elm</b>	Ulmus minor	Tree	timber			Interesting for biodiv.			Direct income source
<b>Blueberry</b>	Vaccinium corymbosum	shrub	Fruit/ berries			Interesting for biodiv.			Direct income source

Table 3 - Optimal adaptation conditions for commercial plant species with potential products to sell among those commonly used in Mediterranean areas. Sorted by Latin name.

Common Name	Latin Name	min. Required rainfall (mm)	min required temp. °C	max required temp. °C	Best pH**	Notes on climate change tolerance	Notes on uses and risks
		Figures in <b>red</b> are estimates, based on similar plants					
<b>Kiwifruit</b>	Actinidia spp (deliciosa)	<b>500</b>	7	28	5,5-7,3	Prefers a sound loamy acid soil, it dislikes alkaline soils and becomes chlorotic at pH 6 or higher. Tolerates a pH in the range 5.5 to 7.3. Succeeds in semi-shade but full sun is best for fruit production. Prefers a sheltered position. Does well when grown into trees. Plants requires a 6 - 8 month frost-free growing season. They are hardy to about -12°C when fully dormant but young growth is very subject to damage by late frosts, being killed back at -2°C. Plants also require a winter chilling of 600 - 1100 hours below 7°C and a long warm summer to ripen the fruit.	Fruits. Italy is the largest producer in the world. Paper is made from the bark. If the bark is removed in one piece from near the root and placed in hot ashes, it becomes very hard and can be used as a tube for a pencil. Mostly planted in irrigated form.
<b>Black alder</b>	Alnus glutinosa	600	7	<b>25</b>	4,5-8,5	<b>River banks.</b> Suitable for: medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist or wet soil.	Can grow as windbreak, hedge, quick growers. Pioneer specie. Biomass specie. According to the phytomass files, annual productivity is estimated at 6 to 9 tonnes per hectare.
<b>Grey alder</b>	Alnus Incana	700	-20	<b>25</b>	6,1-8,2	Suitable for: medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. <a href="#">Nitrogen fixer!</a>	This species fixes atmospheric nitrogen and is also tolerant of polluted soils, it can be used for land reclamation, especially on coal tips[200]. This is an excellent pioneer species for re-establishing woodlands on disused farmland, difficult sites etc.
<b>Aloe vera</b>	Aloe vera	300	5	26	5-8	A Mediterranean environment featuring dry, warm summers and cooler, wet winters is one of the many climates in the sub-tropics that fosters aloe plants. Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	It is found in many consumer products including beverages, skin lotion, cosmetics, or ointments for minor burns and sunburns. There is little scientific evidence of the effectiveness or safety of Aloe vera extracts for either cosmetic or medicinal purposes
<b>Lemon Verbena</b>	Aloysia citrodora	400	5	26	5-7,5	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Sensitive to cold, aromatic
<b>Rope grass/ Ampelodesmos</b>	Ampelodesmos mauritanicus	400	-5	<b>25</b>	4,5-8,5	Species for <a href="#">natural engineering</a> . Ampelodesmos mauritanicus is a PERENNIAL growing to 3 m (9ft) by 1 m (3ft 3in). Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil.	The leaves are used to make a rope and are also used in papermaking. In natural engineering used as strong and tough cover grass. The plant can become an invasive species in non-native ecosystems beyond the Mediterranean Basin

# REPLICATION TOOLKIT

Stinking Bean Trefoil	Anagyris foetida	300	0	25	4,5-8,5	Anagyris foetida is an ultra drought tolerant member of the Fabaceae family. The large shrub originates in the Mediterranean Basin. The plant illustrates one of the best drought resisting strategies of Mediterranean flora: the plant keeps its leaves through autumn, winter and spring, then it goes completely deciduous in summer, becoming dormant and highly resistant to drought. A. foetida can adapt to a wide variety of soils and has been used as a fast growing nitrogen fixing pioneer species in large-scale native restoration of fire damaged areas in Southern Europe. N-fix because it is a leguminous.	Erosion control. There are some medical uses. But mainly as soil improvement and erosion control. Almost all parts of the plants are toxic.
Strawberry tree (Medronho)	Arbutus unedo (or andrachne for ITA)	500	4	25	4,0-6,8	<b>Good climate adaptation.</b> Has high plasticity, i.e. successful water saving strategies to cope with fluctuations in water availability (see source). This species is associated with cork. There are successful plantations and no irrigation needs. Potential risk is fungus on fruit, but no information on potential increase due to CC. Does grow better on northern slopes. Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil. The plant can tolerate maritime exposure. It can tolerate <b>atmospheric pollution</b> .	Fruit - raw or cooked. The fruit contains about 20% sugars and can be used to make delicious and nourishing jams and preserves. It is ripe in November/December and is about 15mm in diameter. When fully ripe it falls from the tree and so it is advisable to grow the plant in short grass in order to cushion the fall of the fruit.
Giant Cane	Arundo donax	600	6	25	5,5-8,3	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It cannot grow in the shade. It prefers moist or wet soil. The plant can tolerate strong winds but not maritime exposure.	Local building material, <b>near rivers</b> , highly <b>invasive</b> plant
Asparagus (wild)	Asparagus sp (officinalis, albidus, aphyllus)	600	11	25	6,5-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid, very alkaline and saline soils.	some species for wild picking, others for production
Mediterranean saltbush	Atriplex halimus	500	10	25	5,8-7,5	Needs water, in maritime areas. Is a <b>salt-excreting</b> plant. Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline and saline soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure.	This plant is often cultivated as forage because tolerating severe conditions of drought, and it can grow up in very alkaline and saline soils. In addition, it is useful to <b>valorize degraded and marginal areas</b> because it will contribute to the improvement of phytomass in this case.
Oats	Avena	600	4	26	4,5-8,6	Normal values for cereals.	cereal
Pot Marigold	Calendula officinalis	600	0	25	4,5-8,3	An easily grown annual to perennial plant, it succeeds in any well-drained soil, though it prefers a good loam and requires a sunny or at least partially sunny position. Plants flower best when they are grown in a poor soil. Tolerates a pH in the range 4.5 to 8.3. The pot marigold is a very ornamental plant that is commonly grown in the flower garden, and occasionally as a culinary herb, there are some named varieties[183]. When well-sited it usually self-sows freely and will maintain itself if allowed.	Pot marigold is one of the best known and versatile herbs in Western herbal medicine and is also a popular domestic remedy. Marigold is grown for its ray florets which have medicinal effect. Seed is a rich source of the conjugated C18:3 fatty acid calendic acid and can serve as a replacement for volatile organic compounds in many industrial chemicals such as paints, coatings and adhesives. Many other uses are known. Leaves - raw. When eaten they first of all impart a viscid sweetness, followed by a strong penetrating taste of a saline nature. They are very rich in vitamins and minerals and are similar to Taraxacum officinale (Dandelion) in nutritional value. The growing plant acts as an insect deterrent, it reduces the soil eelworm population. The growing plant attracts hoverflies to the garden, the young of which are fairly efficient eaters of aphids. The flowers are attractive to bees. Difficulties with extreme temperatures. Flowers are sold to flower shops in many countries.

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Summer heather	Calluna vulgaris	300	0	25	4,5-6,5	Requires a light acid soil and a sunny position. Prefers a sunny position but tolerates light shade. Only succeeds if the pH is below 6.5. Prefers a poor peaty soil. Plants are tolerant of fairly dry soils but they dislike prolonged drought. They tolerate wet conditions in the winter. Plants regenerate well from the base after a fire if the heat was not too great, if the fire was slow and intense then new seedlings will quickly become established	Good for erosion control on poor soils. Heather has a long history of medicinal use in folk medicine. The branches have many uses, including in thatching, as a bedding or a stuffing for mattresses, for insulation, basketry, rope making and for making brooms. The dried branches are a good fuel. The rootstock can be made into musical pipes. A yellow dye is obtained from the plant. The bark is a source of tannin.
Hemp	Cannabis sativa	500	6	25	4,5-8,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils.	Edible Parts: Leaves; Oil; Seed. A fibre is obtained from the stem. It is strong and very durable and is used in making coarse fabrics, rope etc. Hemp fiber has been used extensively throughout history, with production climaxing soon after being introduced to the New World. Items ranging from rope, to fabrics, to industrial materials were made from hemp fiber. Hemp was often used to make sail canvas, and the word "canvas" derives from cannabis. Today, a modest hemp fabric industry exists, and hemp fibers can be used in clothing. Pure hemp has a texture similar to linen.
Caper bush	Capparis sp. Spinosa and others	300	10	25	6,3 -8,3	This species has developed special mechanisms to survive in the Mediterranean conditions, and introduction in semiarid lands may help to prevent the disruption of the equilibrium of those fragile ecosystems. Shows characteristics of a plant adapted to poor soils. This shrub has a high root/shoot ratio and the presence of mycorrhizae serves to maximize the uptake of minerals in poor soils. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils.	The plant is best known for the edible flower buds (capers), often used as a seasoning, and the fruit (caper berries), both of which are usually consumed pickled. Other species of Capparis are also picked along with C. spinosa for their buds or fruits. Other parts of Capparis plants are used in the manufacture of medicines and cosmetics. The flower buds are pickled and used as a flavouring in sauces, salads etc. The young fruits and tender branch tips can also be pickled and used as a condiment. The flower buds are harvested in the early morning and wilted before pickling them in white vinegar. Young shoots - cooked and used like asparagus
Chestnut	Castanea sativa	600	1	23	5,5-7,5	Less resistant, more northerly tree, requires water. Problems in north usually when grown in plantations for the fruit (not timber). Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid and neutral soils and can grow in very acid soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure.	Best at higher altitudes and around 1000 mm. Nuts, flour, bark, timber.
European nettle tree	Celtis australis	400	4	26	5,1-7,8	Big indigenous tree, needs good soils, resistant to drought and pollution. Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	Fodder: Leaves and twigs are lopped for fodder in the dry season; quality is reported to be high, with 15% crude. Also good for <a href="#">birds (eat seeds)</a> and <a href="#">timber</a> .
Carob tree	Ceratonia siliqua	250-500	-7	24	6,2-8,6	Very hardy, resistant species, very plastic (but needs 500 mm for production). Typical for Algarve but now also in north. Lime soils mainly. <a href="#">It can fix Nitrogen</a> . Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.	Protein, good palatability and digestibility. Carob consumed by humans is the dried (and sometimes roasted) pod. The pod consists of two main parts: the pulp accounts for 90% and the seeds for 10% of the pod weight. Carob is mildly sweet and is used in powdered, chip, or syrup form as an ingredient in cakes and cookies, and as a substitute for chocolate. A flour made from the seedpods is used in the cosmetic industry to make face-packs.
Laudanum/ rock rose/Jara	Cistus ladanifer	500	3	26	5,5-7,5	Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure.	So called "Enemy of the Montado". But it has many purposes. Seed - ground into a powder and used with cereal flours in making cakes and breads. An oleo-resin obtained from the leaves and stems is eaten raw or used as a commercial food flavouring in baked goods, ice cream, chewing gum etc. The glandular hairs on the leaves yield the oleo-resin 'ladanum', used medicinally and in soaps, perfumery, fumigation etc (as oil, resins or else).

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Common hazel nut	Corylus avellana	700	3	25	4,5-8,5	Above 600 mm water. It is noted for attracting wildlife. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. The plant can tolerate strong winds but not maritime exposure.	Used for nuts
Azarole	Crataegus azarolus	500	0	25	4-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist or wet soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure. It can tolerate atmospheric pollution.	Fruit (25mm berries) - raw or cooked in pies, preserves etc. The fruit can be used fresh or dried for later use. <a href="#">Good for fences.</a>
Common hawthorn	Crataegus Monogyna (or other spp)	600	2	25	5,8-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist or wet soil and can tolerate drought. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.	There are many spp. In ITA one there are 14 species. <a href="#">Good for birds.</a> Can be used as nurse shrub (thorns).
Saffron crocus	Crocus sativus	400	-10	25	6,5-9,5	Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils.	The flower grows best in areas of full sun in well-drained soil with moderate levels of organic content. Saffron is considered to be the most valuable spice by weight. Depending on the size of harvested stigmas, 50,000–75,000 Crocus sativus plants are needed to produce about 1 pound of saffron. Plants take 4 - 5 years to come into flowering from seed. It yields about 27 kilos of rich orange stigmas per hectare.
Quince	Cydonia oblonga	500	4	25	6,75-7,0	Used for <a href="#">living fences</a> , but needs water, suitable for nearby houses (orchard). they prefer slightly acid soils. This is a small tree only. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It prefers moist soil.	Quince is a hard yard tough plant that does not require much maintenance. It requires a cooler period of the year, with temperatures under 7 °C (45 °F), to flower properly. Fruits are edible. A mucilage obtained from the seed coat is used as a gum arabic substitute to add gloss to material. The seed contains 20% mucilage and 15% fatty oils. The fruit is rich in pectin. Pectin is said to protect the body against radiation. The leaves contain 11% tannin.
Tagasaste / tree lucerne	Cytisus proliferus	500	10	25	4-7	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.	<a href="#">N-fixing.</a> Tagasaste is a valued <a href="#">forage</a> for ruminants because of its good palatability and high protein content. It can be grazed directly, or cut and fed fresh or dried. As a fodder crop tagasaste delivers between 23 and 27% crude protein (14–30% in Western Australia) and 18–24% crude indigestible fibre. With proper application of fertiliser it can maintain these levels even when grown on poor soils.
Portuguese broom	Cytisus striatus	400	5	25	4-9	It can <a href="#">fix Nitrogen</a> , and <a href="#">attracts wildlife</a> . Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very acid soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	An excellent fibre is obtained from the bark, it is used in the manufacture of paper, cloth and nets. The flower buds are pickled and used as a substitute for capers. They can also be added to salads
Loquat	Eriobotrya japonica	600	10	25	4,5-8,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. E. japonica is drought tolerant but will be more productive when it gets regular water.	Fruits can be eaten, dried and frozen. Spirits can also be made from them. Makes also good jams.
Ferula/Giant Fennel	Ferula communis	400	9	25	4,5-8,5	Dry hills, walls, waste ground and limestone[89], often in soils that are damp in the spring. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	.A gum 'Gum Ammoniac' is obtained by notching the root. It is used as an incense, it also has medicinal value. The stems are used in furniture making. The dried pith is used as a tinder, it burns very slowly inside the stem and can thus be carried from one place to another. A new market seems to be Fibres.



# REPLICATION TOOLKIT

<b>Fig tree</b>	Ficus carica (and other spp)	500	4	25	6-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	Used for fruits
<b>Narrow-leafed ash</b>	Fraxinus angustifolia	400	3	26	5,8-8	<a href="#">On river sides</a> . Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It cannot grow in the shade. It prefers dry or moist soil. The plant can tolerate strong winds but not maritime exposure. It can tolerate atmospheric pollution.	Only in waterlines- stream banks. No other uses.
<b>Broom</b>	Genista falcata/lusitanica	400	5	25	4,5-6,5	Genus, similar to Cytisus, of about 90 species of mainly deciduous, sometimes spiny shrubs and occasionally trees found in habitats ranging from pasture and moorland to cliffs and rocky places in Europe, the Mediterranean and western Asia. Soil Conditions - Medium to light, fertile, well drained soil. Fine up till -8 C. In full sun.	Erosion control specie. Similar to Cytisus. Grown for their small, pea-like flowers. This species is associated with oak and chestnut forests. It forms successional heathlands in the forests and it is a melliferous species. It appears in siliceous soils.
<b>Sulla</b>	Hedysarum coronarium	400	11	25	6-10,5	It likes arid alkaline soils and it has even specific efficient calcium-absorbing organs in the roots (its specific nitrogen fixing symbiont is Rhizobium sullae), where it accumulates CaCo3. About importance and distribution: Sulla is found in the Mediterranean basin with a distribution from northern Africa to southern Spain and southern Italy. It is of particular importance in agriculture due to its ability to adapt to drought and coastal conditions (Douglas, 1984), and is therefore an ideal subject for studying salt tolerance (range limit 150–700 mM NaCl), alkaline tolerance (up to pH 9–10.5).	Cultivated for animal <a href="#">fodder</a> and <a href="#">hay</a> , and for honey production.. Sulla can be a pioneer species in poor, compact and degraded soils and, as an <a href="#">N-fixing</a> legume, improve soil fertility for the next crop (Ben Jeddi, 2005). Notably, sulla was introduced in the 1950s for <a href="#">erosion control</a> in New Zealand
<b>Curry plant</b>	Helichrysum italicum	400	10	25	6-8,5	Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure. Requires a light well-drained soil in a sunny sheltered position. Intolerant of excessive moisture. This species is not hardy in the colder areas of the country, it tolerates temperatures down to about -10°C. Plants can be pruned back to the old wood in spring in order to maintain the shape of the plant and promote lots of new growth.	Oils. Besides that leaves are edible and taste like curry. Dried flowers keeping their color. Can thus be used in salads. Not much other uses.
<b>Sea buckthorns</b>	Hippophae rhamnoides	600	6	25	6-8	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry moist or wet soil and can tolerate drought. The plant can tolerate maritime exposure.	<a href="#">It can fix Nitrogen</a> . Fruit - raw or cooked. Very rich in vitamin C. Various purposes, berries difficult to harvest. It can withstand extreme temperatures from -43° to 40°C and is considered to be drought resistant. However, irrigation is needed in regions receiving less than 400 mm (16") of rainfall annually (Li and Shroeder 1996). Because the plant grows quickly, even in very exposed conditions, and also <a href="#">adds nitrogen to the soil</a> , <a href="#">it can be used as a pioneer species</a> to help the re-establishment of woodland in difficult areas.
<b>Dragon fruit/ Pitahayas</b>	Hylocereus spp.	300	12	25	5-7,5	The flowers are pollinated by Bats. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid and neutral soils and can grow in very acid soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought. A plant of the warm tropical lowlands with low to high rainfall. It grows best in areas where annual daytime temperatures are within the range 18 - 28c, but can tolerate 12 - 34c. It succeeds with a mean annual rainfall in the range 300 - 3,500mm. Often an epiphytic plant, though it also grows on the ground. Requires a well-drained soil and a pH of 6 or lower. Prefers a pH in the range 5.3 - 6.7, tolerating 5 - 7.5. Widely cultivated in the tropics and subtropics, it has often escaped from cultivation and become naturalised. It has been classified as 'invasive' in some areas, where it often spreads vegetatively.	Fruit - raw or cooked. A sweet, pleasant flavour. The red fruit is 7 - 12cm long, covered in prominent scales. Unopened flower buds can be cooked and eaten as a vegetable. It produces aerial roots enabling it to climb and support itself. Can be invasive.

# REPLICATION TOOLKIT

<b>St. John's Wort</b>	Hypericum perforatum/ perforatum	400	10	25	4,5-8,3	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. Succeeds in dry soils. Plants grow well in sun or semi-shade but they flower better when in a sunny position. St. John's wort is often found as a weed in the garden. It grows well in the summer meadow and is a useful plant for attracting insects.	Herbs. St. John's wort has a long history of herbal use for many medicinal purposes. Yellow, gold and brown dyes are obtained from the flowers and leaves. In the middle ages this was the most used anti-biotic and healing for wounds.
<b>Hyssop</b>	Hyssopus vulgaris	400	5	26	5,5-7,5	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Walnut</b>	Juglans regia	650	-23	23	5,25-6	Needs good soils. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers moist soil.	Nuts and oils for many purposes.
<b>Common Juniper</b>	Juniperus communis	500	9	25	4,5-8,5	As all junipers. They grow on all kind of soils and can stand a wide variety of pH levels. Resistant, also on dry sandy soils and for erosion control.	Fruit - raw or cooked or dried. The fruit is often used as a flavouring in sauerkraut, stuffings, vegetable pates etc, and is an essential ingredient of gin. An essential oil is sometimes distilled from the fruit to be used as a flavouring
<b>Juniper</b>	Juniperus navicularis	500	9	25	4,5-8,5	As all junipers. They grow on all kind of soils and can stand a wide variety of pH levels. Resistant, also on dry sandy soils and for erosion control.	Fruit - raw or cooked or dried. The fruit is often used as a flavouring in sauerkraut, stuffings, vegetable pates etc, and is an essential ingredient of gin. An essential oil is sometimes distilled from the fruit to be used as a flavouring
<b>Phoenician juniper</b>	Juniperus phoenicea	500	9	25	4,5-8,5	As all junipers. They grow on all kind of soils and can stand a wide variety of pH levels. Resistant, also on dry sandy soils and for erosion control.	Fruit - raw or cooked or dried. The fruit is often used as a flavouring in sauerkraut, stuffings, vegetable pates etc, and is an essential ingredient of gin. An essential oil is sometimes distilled from the fruit to be used as a flavouring
<b>Juniper</b>	Juniperus turbinata	500	10	25	4,5-8,5	As all junipers. They grow on all kind of soils and can stand a wide variety of pH levels. Also resistant, on dry land and for erosion control.	Fruit - raw or cooked or dried. The fruit is often used as a flavouring in sauerkraut, stuffings, vegetable pates etc, and is an essential ingredient of gin. An essential oil is sometimes distilled from the fruit to be used as a flavouring
<b>Lavender</b>	Lavandula angustifolia, or Lavandula luisieri	300	6	26	6,5-7,5	All very resistant. Luisieri is a wild specie in ESP suitable for cultivation. Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Lovage</b>	Levisticum officinale	400	5	26	6,0-7,5	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Lolium</b>	Lolium rigidum	500	4	26	6-7,5	As normal for grass species this grows on most soils and in a wider range of pH levels but best between 6-7,5	fodder
<b>Southern tea tree</b>	Lycium intricatum	300	12	25	4,5-8,5	Dry circumstances. No frost. Good on salty soils,. Never minding long periods of no rain. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils	Shrub, up to 4 m. With spines, good for fences. Fruit - raw or cooked. The fruit is a berry about 8mm in diameter. Only the fully ripe fruits should be eaten. Young shoots - cooked. Plants have an extensive root system and can be planted to stabilize banks.



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<b>Albardine, esparto grass</b>	Lygeum spartum	400	0	25	4,5-8,5	Species for <a href="#">natural engineering</a> . Lygeum spartum is a PERENNIAL growing to 0.5 m (1ft 8in) by 0.3 m. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil.	A fibre is obtained from the leaves, it makes a fine quality paper. Used also for making mats, sails, ropes etc. In natural engineering used as strong and tough cover grass.
<b>Moon trefoil/tree medick</b>	Medicago arborea	500	10	25	5,5-7,5	It can fix Nitrogen. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil. The plant can tolerate maritime exposure.	Forage crop. symbiotic relationship with the bacterium Sinorhizobium meliloti, which is capable of <a href="#">nitrogen fixation</a>
<b>Lemon balm</b>	Melissa officinalis	600	4	26	5,6-9	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Hart's pennyroyal</b>	Mentha sp.	500	4	26	6,5-7,5	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics. There are many Mentha species like: Many like: Cervina, pullegium, aquatica, longifolia, suaveolens, arvensis, gracilis, rotundifolia, spicata, viridis.
<b>Mulberry</b>	Morus alba	500	10	25	6-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.	White mulberry leaves are the preferred feedstock for silkworms, and are also cut for food for livestock (cattle, goats, etc.) in areas where dry seasons restrict the availability of ground vegetation. The fruit are also eaten, often dried or made into wine.
<b>Myrtle</b>	Myrtus communis	600	8	25	5,5-7,5	Resistant plant. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil. The plant can tolerate maritime exposure.	Various purposes for berries (8mm). Used to make liqueur or berries used in pork dishes. An essential oil from the leaves and twigs is used as a condiment, especially when mixed with other spices.
<b>Olives</b>	Olea europaea sylvestris	400-600	-10	26	6-6,75	Choose resistant varieties, problem with bacteria (but probably originating from Spanish nurseries). Variety sylvestris is very resistant, no problems seems yet with bacteria. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	Good for <a href="#">biodiversity</a> , and of course for fruits and oils.
<b>Prickly pear</b>	Opuntia ficus-India	300	5	26	6,1-7,8	Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.	Fruits. Listed Invasive in some countries, although the reality is that they are very slow and easy to control. <a href="#">Perfect fire buffer when planted in fence style</a>
<b>Oregano</b>	Origanum vulgare	400	3	26	6,5-7,5	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Princesstree</b>	Paulownia tomentosa	400	9	25	4,5-8,5	Good in <a href="#">C4 Carbon Fixation (more efficient)</a> . This is common among grasses, but unique among all other trees that use C3 Carbon Fixation. Also good for fodder. It also has some medical purposes and for biomass. Paulownia tomentosa <a href="#">can survive wildfire</a> because the roots can regenerate new, very fast-growing stems.	It needs water in the early years, otherwise it does not survive. In North America its an exotic invasive specie. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. Biomass: <a href="http://www.paulownia.rs/pub/download/13796072233255_paulownia_biomassvestmentproject.pdf">http://www.paulownia.rs/pub/download/13796072233255_paulownia_biomassvestmentproject.pdf</a> Wood: <a href="http://www.wood-database.com/paulownia/">http://www.wood-database.com/paulownia/</a> Fodder: <a href="http://www.worldagroforestry.org/treedb/AFTPDFS/Paulownia_tomentosa.PDF">http://www.worldagroforestry.org/treedb/AFTPDFS/Paulownia_tomentosa.PDF</a> . Medicinal: <a href="http://www.sciencedomain.org/abstract/14066">http://www.sciencedomain.org/abstract/14066</a>

# REPLICATION TOOLKIT

Avocado	Persea Americana	500	10	45	4,5-7,0	It grows best in areas where annual daytime temperatures are within the range 14 - 40°C, but can tolerate 10 - 45°C. It prefers a mean annual rainfall in the range 500 - 2,000mm, but tolerates 300 - 2,500mm. Prefers a position in full sun. Succeeds on all kinds of soil. Requires a well-drained soil, the plant is intolerant of water-logging. Prefers a pH in the range 5 - 5.8, tolerating 4.5 - 7. Requires a position sheltered from strong winds	Fruits. Summer shade tree. Backyard tree. Xerophytic. Other Uses: The pulp and the seeds contain fatty acids, such as oleic, lanolic, palmitic, stearic, linoleic, capric and miristic acid which constitutes 80% of the fruits fatty content. The non-drying oil extracted from the seed is used by the cosmetic industry in soaps and skin moisturizer products. The unripe fruit is poisonous, the seeds also!
Narrow-leaved mock privet/ green olive tree	Phillyrea angustifolia or latifolia	500	4	25	5,6-7,5	<b>Bee shrub</b> (looks like olive tree). No thorns. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil. The plant can tolerate maritime exposure.	Not much known about this shrub. Fruits for birds (6mm), but also attract <i>Brahmaea europaea</i> (European owl moth). Charcoal production. Fencing specie.
Allepo Pine	Pinus halepensis	400	11	25	4,5-8,5	Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.	Turpentine production.
Maritime pine	Pinus pinaster	500	3	25	5,2-6,2	Has sanitary problem (nematode) and only used for wood, difficult to get out of montado without damaging oaks. No use outside coastal areas. .Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid and neutral soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure.	Turpentine and Seed - raw or cooked. Rich in oil, it has a resinous flavour. The seed is about 1cm long. A vanillin flavouring is obtained as a by-product of other resins that are released from the pulpwood
Stone pine	Pinus pinea	250	0	24	5,2-6,2	Very resistant, also on poor soils. Disadvantage is fire risk and not known if/how CC affects production of pine pits (precipitation in september is vital). Usable for improving regeneration of cork oak (shade). Suitable for: light (sandy) and medium (loamy) soils, prefers well-drained soil and can grow in nutritionally poor soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.	Resins. And seed - raw or cooked. Rich in oil, the seed has a soft texture with a hint of resin in the flavour. It makes a delicious snack and can also be used as a staple food. The seeds are often added to ice cream, cakes, puddings etc. ADPM sends report on pinus growth conditions (A1). Pinus pinea in Europe: distribution, habitats, usage and threats. R. Abad Vinhas; G. Caudullo; S. Oliveira; D. De Rigo
Pistachio, Localized variety	Pistacia lentiscus and other spp	300	7	25	7-7,8	Companion of cork oak. Very resistant, easy to grow. But hard to propagate (birds eat seeds). Thus good for <a href="#">birds and biodiversity romo</a> . Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: neutral and basic (alkaline) soils and can grow in very alkaline soils. It cannot grow in the shade. It prefers dry or moist soil and can tolerate drought.	Nuts and oils.
Poplar	Populus spp	600	10	25	4,5-7,5	P Alba is Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay soil. It cannot grow in the shade. It prefers dry or moist soil. The plant can tolerate maritime exposure. Landscape Uses:Erosion control, Aggressive surface roots possible.	Some poplars (ratelpopulier) have a lot of root sprouts (invasive). Poplars have very extensive and aggressive root systems that can invade and damage drainage systems. Especially when grown on clay soils, they should not be planted within 12 metres of buildings since the root system can damage the building's foundations by drying out the soil. Leaves - rich in Vitamin C. Inner bark - dried, ground into a powder and added to flour for making bread. A fairly wind resistant tree, it can be grown as part of a shelterbelt planting. A yellow dye is obtained from the bark. Wood - rather woolly in texture, without smell or taste, of low flammability, not durable, very resistant to abrasion, very light, soft, elastic. It is used for less good quality purposes such as making matches, packing materials.
Apricot	Prunus armenica	400	0	25	6,5-7,5	Requires a well-drained moisture retentive fertile soil in a warm sunny position. Succeeds in light shade but fruits better in a sunny position. Thrives in a loamy soil, doing well on limestone. Prefers some chalk in the soil but is apt to become chlorotic if too much is present. Prefers a pH in the range 6.5 to 7.5. Dislikes clay soils. Intolerant of saline soils. The plant is heat tolerant and withstand cold winter temperatures.	Fruits. All or parts of this plant are poisonous, Fragrant flowers, Attractive flowers or blooms.

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Almond	Prunus dulcis	300	7	25	6-6,75	Earlier flowering (result of CC) can result in frost damage. On the other hand, many almond varieties are highly drought-resistant showing signs of naturalization (link) (spontaneous colonization e.g. in Spain. Many varieties produce nuts without irrigation. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers moist soil.	Used for nuts and oils for many purposes.
Mirabelle plum	Prunus insititia	600	3	26	6-7,5	Grows in southern Portugal (P. spinosa in the north), might thus be more climate adaptive. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. The plant can tolerate strong winds but not maritime exposure.	Used for fruits (3cm). Fruits (6mm) are edible. Fruit - raw or cooked. More acid than a plum but it is very acceptable raw when fully ripe, especially after being touched by frost
Blackthorn/ Sloe	Prunus spinosa	700	4	25	6,5-8	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. The plant can tolerate maritime exposure.	The fruit is more usually used in jellies, syrups, preserves etc and as a flavouring for sloe gin and other liqueurs. The rest of the plant is toxic. The <a href="#">hedge is cattle-proof</a> if it is well maintained, though it is rather bare in the winter and, unless the hedge is rather wide, it is not a very good shelter at this time
Pomegranate	Punica granatum	600	4	25	5,5-7	Perhaps more resistant than Cydonia (marmelade), but needs water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil.	Fruit; Leaves; Seed. Also good for hedges as a possible substitute for box, Buxus spp
Iberian pear	Pyrus bourgeana	400	5	25	6-6,75	Very resistant, grows in very dry areas. As rootstock for Pyrus communis to produce fruit for consumption.	It is a wild relative of and potential gene donor to pear, P. communis ssp. communis. Fruits are edible, but smaller. <a href="#">Attractive to wildlife</a>
Kermes oak / Coscojas	Quercus coccifera	400-600	7	25	4,7-6,5	Last Quercus species to survive in extreme drought, highly important for biodiversity, very climate-adaptive. Very plastic in soil types. Does better than Holm oak under extreme circumstances.	Shrub oak associated with several asparagus species
Portuguese oak	Quercus faginea	400	4	25	4,7-6,5	Only in central zones of Portugal, where water available. Is intermediate species between Mediterranean and Atlantic zones, humidity is the limitation. <a href="#">Good for biodiversity</a> (but susceptible to CC).	For Acorns.
Holm (stone) oak	Quercus rotundifolia (ilex rotundifolia)	350	-24	25	4,7-6,5	Less adaptable when compared to Q. suber, Ceratonia siliqua. Expected increase vulnerability to disease. On the other hand, very high regeneration potential also in exposed areas. Problems with Phytophthora possibly due to cattle and management in plantations (not known). Problem mostly for small landowners who need profitable plantations. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. The plant can tolerate maritime exposure.	The acorns, like those of the cork oak, are edible (toasted or as a flour), and are an important food for free-range pigs reared for ibérico ham production. Boiled in water, the acorns can also be used as a medicinal treatment for wound disinfections. Besides that of course the wood is useful. A hedge can be made as well.
Cork oak	Quercus suber	479	-10	25	4,7-6,5	Suffer from Phytophthora, but on northern slopes usually bigger. See radiation map; this factor influences resistance, just like forest cover, soils and precipitation. Suitable for: medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil. The plant can tolerate strong winds but not maritime exposure.	Cork, Acorns, timber. Climate data source: 'Cork-oak - Technical guidelines for genetic conservation and use'. Luis Gil and Maria Carolina Varela.
Retama	Retama sphaerocarpa	500	5	25	6,5-8	Can be used as <a href="#">nurse shrub</a> , resistant. No thorns. Not much else known about this species.	Can be used to make brooms. Also good for medicine after snake bites.

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<b>Mediterranean buckthorn (mock privet)</b>	Rhamnus alaternus/lycioides	500	8	25	5,8-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil.	Very easy to grow, good fruits, although not much market Plants can be used as a screen or a <a href="#">hedge</a>
<b>Sicilian Sumac/ Sommacco</b>	Rhus coriaria	400	16	25	4,5-8,5	The plant will grow in any type of soil that is deep and well-drained. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It prefers dry or moist soil.	The dried fruits (3 mm) are used as a spice, particularly in combination with other spices in the mixture called Za'atar. Cashew family. The leaves and the bark were traditionally used in tanning and contain tannic acid. Dyes of various colours, red, yellow, black, and brown, can be made from different parts of the plant. Oil extracted from the seeds can be used to make candles. The immature fruits are used as caper substitutes. Some caution is advised, see the notes above on toxicity. The crushed fruit, mixed with Origanum syriacum, is a principal ingredient of 'Zatar', a popular spice mixture used in the Middle East. The seed is used as an appetizer in a similar manner to mustard
<b>Black currant</b>	Ribes nigrum	600	3	25	6-6,9	Above 600 mm water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.	Used for fruits
<b>Red currant</b>	Ribes rubrum	600	3	25	6-7	Above 600 mm water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.	Used for fruits
<b>Dog rose</b>	Rosa canina	500	4	25	6-8	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist or wet soil. The plant can tolerate strong winds but not maritime exposure.	Fruits, dry, cooked, jams, syrup and tea. Thus you have to add value. <a href="#">Plants make a dense and cattle-proof hedge, especially when trimmed</a>
<b>Rosmary</b>	Rosmarinus officinalis	300	6	26	5,25-6,75	More resitant specie. Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Blackberry</b>	Rubus fruticosus	600	3	25	5,25-6	Above 600 mm water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.	Used for fruits
<b>Raspberry</b>	Rubus idaeus	600	3	25	5,25-7,5	Above 600 mm water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.	Used for fruits
<b>Wild blackberry</b>	Rubus ulmifolius	500	2	26	4,5-7,5	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It prefers moist soil.	Wild varieties hard to control. Not yet really marketed but has potential enough. Berries can be used for many purposes.
<b>Butcher's-broom</b>	Ruscus aculeatus	500	4	25	3-7	Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay and nutritionally poor soils. Suitable pH: acid, neutral and basic (alkaline) soils and can grow in very alkaline soils. It can grow in full shade (deep woodland) or semi-shade (light woodland). It prefers dry or moist soil and can tolerate drought.	Young shoots - cooked. They are harvested in the spring as they grow through the soil and used as an asparagus substitute. The taste is pungent and rather bitter. The roasted seed is a coffee substitute. Mature shoots are bound into bunches and used as scourers or as besoms (brooms).

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<b>Saltworth</b>	Salsola oppositifolia	300	7	25	4,5-8,5	Can grow in desert like circumstances and in dunes. Can withstand salt.	Erosion control. Can withstand extreme dry periods. The leaves and shoots of S. soda (close family), known in Italy as barba di frate or agretti, are cooked and used as vegetables. The species is also used for the production of potash.[6] In Namibia, where the plant is called gannabos, it is a valuable fodder plant.
<b>Mint</b>	Salvia officinalis	400	5	26	6-7	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Winter savory</b>	Satureja montana	300	5	26	6,5-7	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Spanish Broom</b>	Spartium junceum	300	0	25	4,5-8,5	Succeeds in any well-drained but not too fertile soil in a sunny position. Prefers a lime free soil according to one report whilst another says that it thrives on alkaline and poor sandy soils. Very wind resistant, tolerating maritime exposure. Tolerates atmospheric pollution and thrives on hot dry banks. A very ornamental plant, it is hardy to between -10 and -18°C when in a suitable position	Erosion control and natural fence (ornamental as well). Minor uses. Some medical, fibre and essential oil. In some countries (US/ South America this specie is invasive.
<b>Thyme</b>	Thymus sp	400	5	26	6-6,75	Like most aromatics: Suitable for: light (sandy) and medium (loamy) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers dry or moist soil and can tolerate drought.	Aromatics.
<b>Subterranean clover</b>	Trifolium subterraneum (and other spp)	500	4	26	6-7,5	As normal for clover species this grows on most soils and in a wider range of pH levels, but best between 6-7,5	fodder
<b>Field Elm</b>	Ulmus minor	400	0	25	4,5-8,3	Well drained soils, can withstand winters. It is noted for attracting wildlife and butterflies. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils, prefers well-drained soil and can grow in heavy clay soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade.	Timber. The species has a hugely variable reaction to Dutch elm disease. Inner bark can be used for medical purposes and fibres. A good tree for growing grapes into.
<b>Blueberry</b>	Vaccinium corymbosum	600	3	25	4,5-5,5	Above 600 mm water. Suitable for: light (sandy), medium (loamy) and heavy (clay) soils and prefers well-drained soil. Suitable pH: acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It prefers moist soil.	Used for fruits