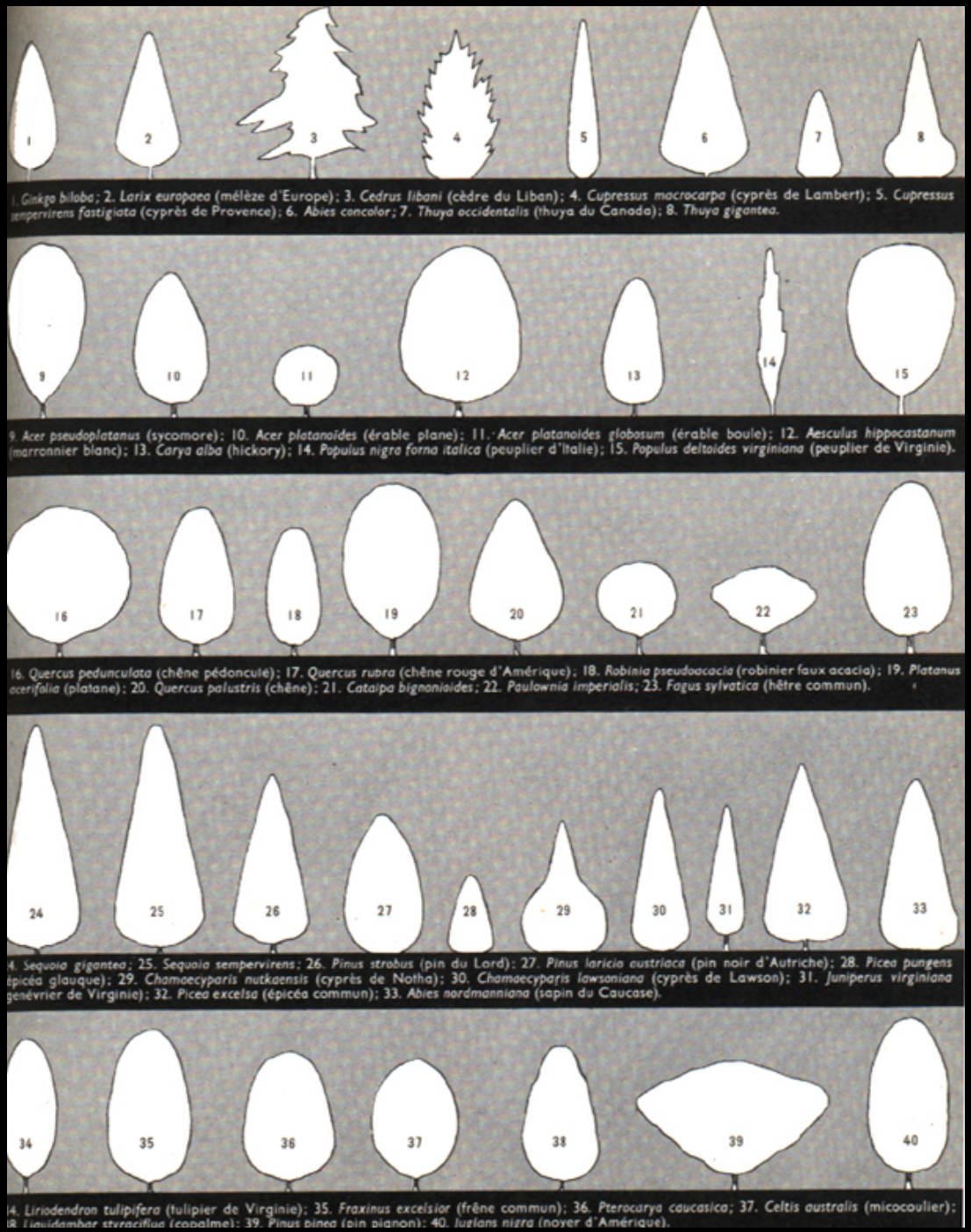
sistemi di alberature in ambiente urbano
A cura di Monica Sgandurra

variazioni temporali

forme



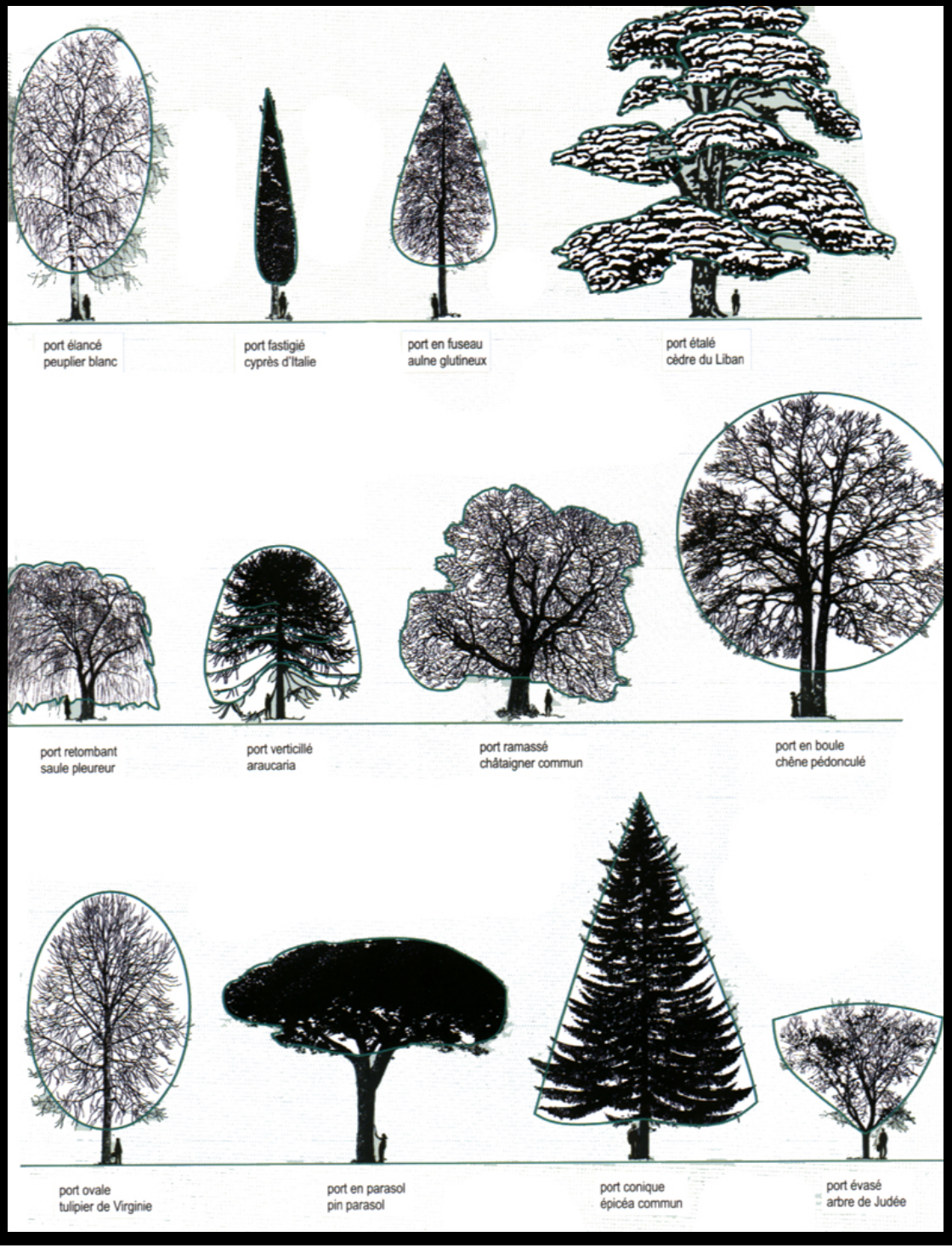
1. *Ginkgo biloba*; 2. *Larix europaea* (mélèze d'Europe); 3. *Cedrus libani* (cèdre du Liban); 4. *Cupressus macrocarpa* (cyprès de Lambert); 5. *Cupressus sempervirens fastigiata* (cyprès de Provence); 6. *Abies concolor*; 7. *Thuya occidentalis* (thuya du Canada); 8. *Thuya gigantea*.

9. *Acer pseudoplatanus* (sycomore); 10. *Acer platanoides* (érable plane); 11. *Acer platanoides globosum* (érable boule); 12. *Aesculus hippocastanum* (marronnier blanc); 13. *Carya alba* (hickory); 14. *Populus nigra forna italica* (peuplier d'Italie); 15. *Populus deltoides virginiana* (peuplier de Virginie).

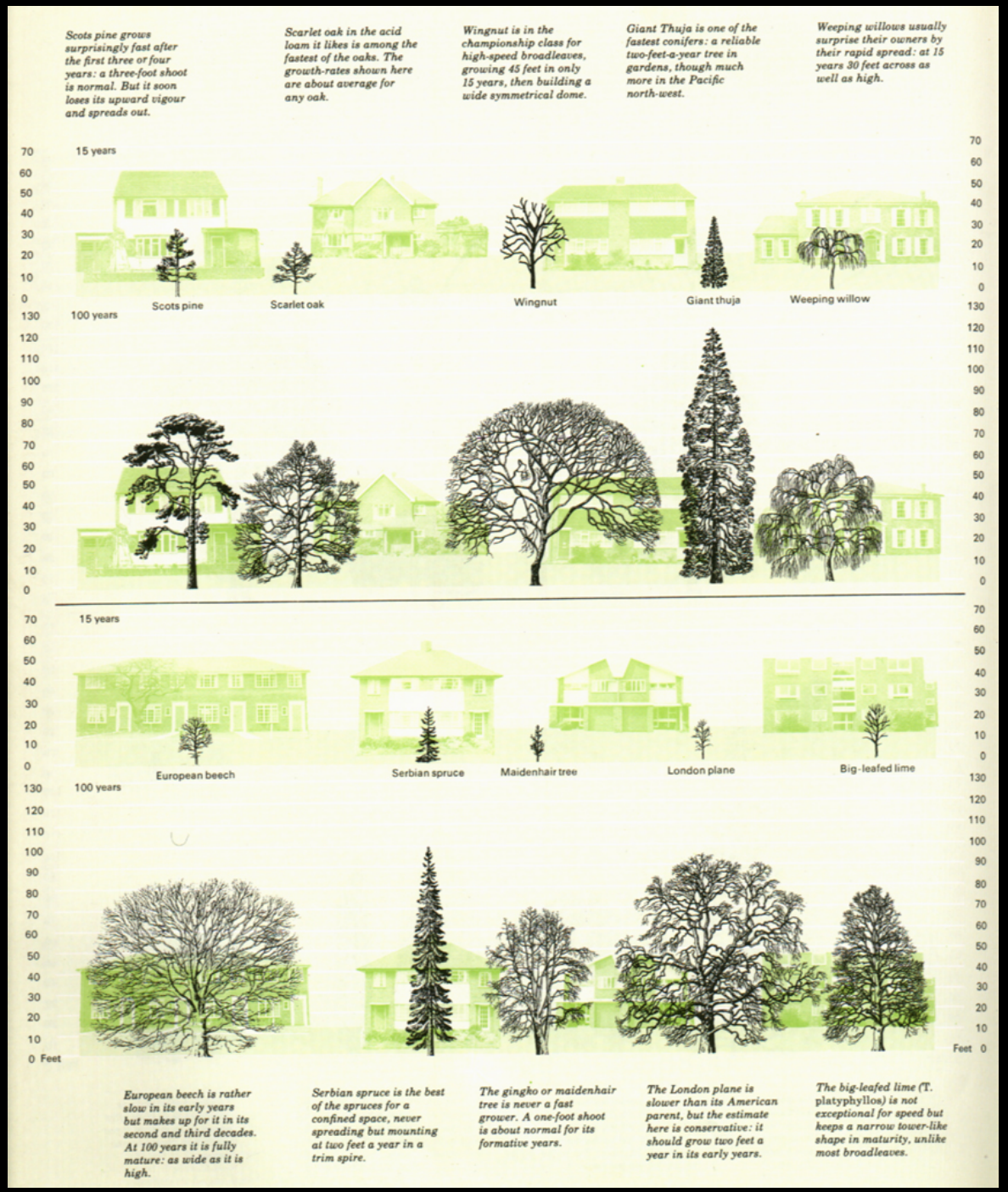
16. *Quercus pedunculata* (chêne pédoncule); 17. *Quercus rubra* (chêne rouge d'Amérique); 18. *Robinia pseudoacacia* (robinier faux acacia); 19. *Platanus acerifolia* (platane); 20. *Quercus palustris* (chêne); 21. *Catalpa bignonioides*; 22. *Paulownia imperialis*; 23. *Fagus sylvatica* (hêtre commun).

4. *Sequoia gigantea*; 25. *Sequoia sempervirens*; 26. *Pinus strobus* (pin du Lord); 27. *Pinus laricio austriaca* (pin noir d'Autriche); 28. *Picea pungens* épicéa glauque); 29. *Chamaecyparis nutkaensis* (cyprès de Notha); 30. *Chamaecyparis lawsoniana* (cyprès de Lawson); 31. *Juniperus virginiana* genévrier de Virginie); 32. *Picea excelsa* (épicéa commun); 33. *Abies nordmanniana* (sapin du Caucase).

4. *Liriodendron tulipifera* (tulipier de Virginie); 35. *Fraxinus excelsior* (frêne commun); 36. *Pterocarya caucasica*; 37. *Celtis australis* (micocoulier); 8. *Liquidambar styraciflua* (copalme); 39. *Pinus pinea* (pin pignon); 40. *Juglans nigra* (noyer d'Amérique).


port élancé
peuplier blanc
port fastigié
cyprès d'Italie
port en fuseau
aulne glutineux
port étalé
cèdre du Liban
port retombant
saule pleureur
port verticillé
araucaria
port ramassé
châtaigner commun
port en boule
chêne pédonculé
port ovale
tulipier de Virginie
port en parasol
pin parasol
port conique
épicéa commun
port évasé
arbre de Judée

sviluppo

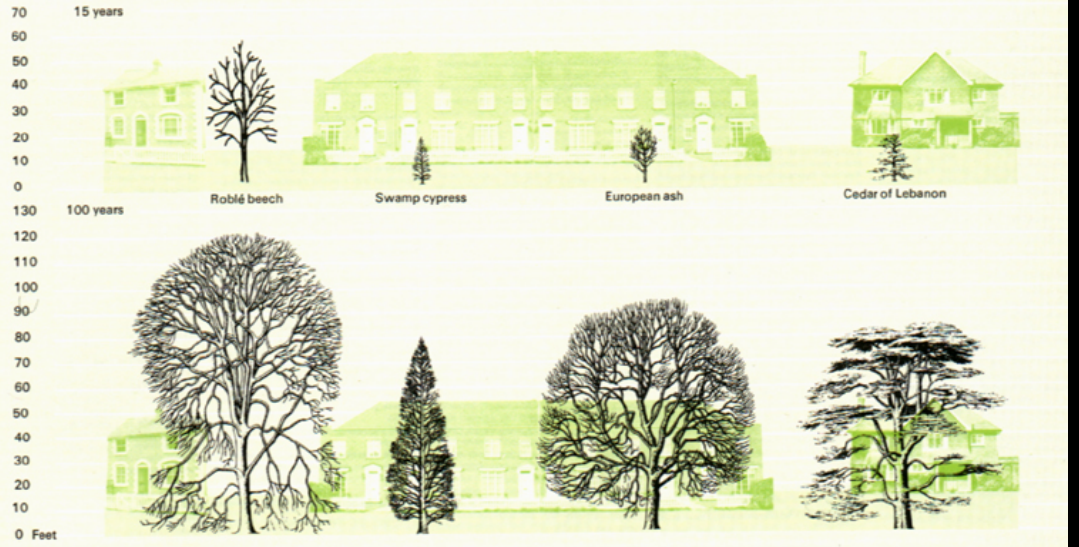

Scots pine grows surprisingly fast after the first three or four years: a three-foot shoot is normal. But it soon loses its upward vigour and spreads out.
Scarlet oak in the acid loam it likes is among the fastest of the oaks. The growth-rates shown here are about average for any oak.
Wingnut is in the championship class for high-speed broadleaves, growing 45 feet in only 15 years, then building a wide symmetrical dome.
Giant Thuja is one of the fastest conifers: a reliable two-feet-a-year tree in gardens, though much more in the Pacific north-west.
Weeping willows usually surprise their owners by their rapid spread: at 15 years 30 feet across as well as high.
15 years
100 years
Scots pine
Scarlet oak
Wingnut
Giant thuja
Weeping willow
European beech
Serbian spruce
Maidenhair tree
London plane
Big-leafed lime
Feet
European beech is rather slow in its early years but makes up for it in its second and third decades. At 100 years it is fully mature: as wide as it is high.
Serbian spruce is the best of the spruces for a confined space, never spreading but mounting at two feet a year in a trim spire.
The gingko or maidenhair tree is never a fast grower. A one-foot shoot is about normal for its formative years.
The London plane is slower than its American parent, but the estimate here is conservative: it should grow two feet a year in its early years.
The big-leafed lime (T. platyphyllos) is not exceptional for speed but keeps a narrow tower-like shape in maturity, unlike most broadleaves.

Spanish chestnut is relatively slow in its earlier years but immensely vigorous in middle age, when it will put out ten-foot shoots in one year if it is cut back hard.

Silver maple is among the fastest of the maples, but has a reputation for making weak wood which is liable to split. Its initial energy fades relatively early in life.

All larches are among the quicker-growing conifers. The speed of the European larch is typical: at 15 years it is growing three feet a year. A hundred years brings it to maturity.

The junipers are a slow-growing race–hence excellent for small gardens. Common European juniper scarcely reaches tree stature–even in 100 years.



The southern beeches (Nothofagus) are among the fastest of all broadleaves: the Roblé beech's 60 feet in 15 years is comparable to the performance of much shorter-lived willows and poplars.

Swamp cypress grows fairly slowly but steadily to a great age. At 100 years it is still not fully grown.

American ash is one of the fastest-growing American hardwoods. European ash **(above)** *is steadier but still vigorous, reaching 100 feet or so in well under 100 years.*

Cedar of Lebanon grows and forms its venerable plateaux much faster than you might expect. A hundred years is enough to complete the picture of sublime old age.

classificazione per dimensioni

ALBERI DI PRIMA GRANDEZZA
gli alberi che crescono oltre i 20 m in età adulta

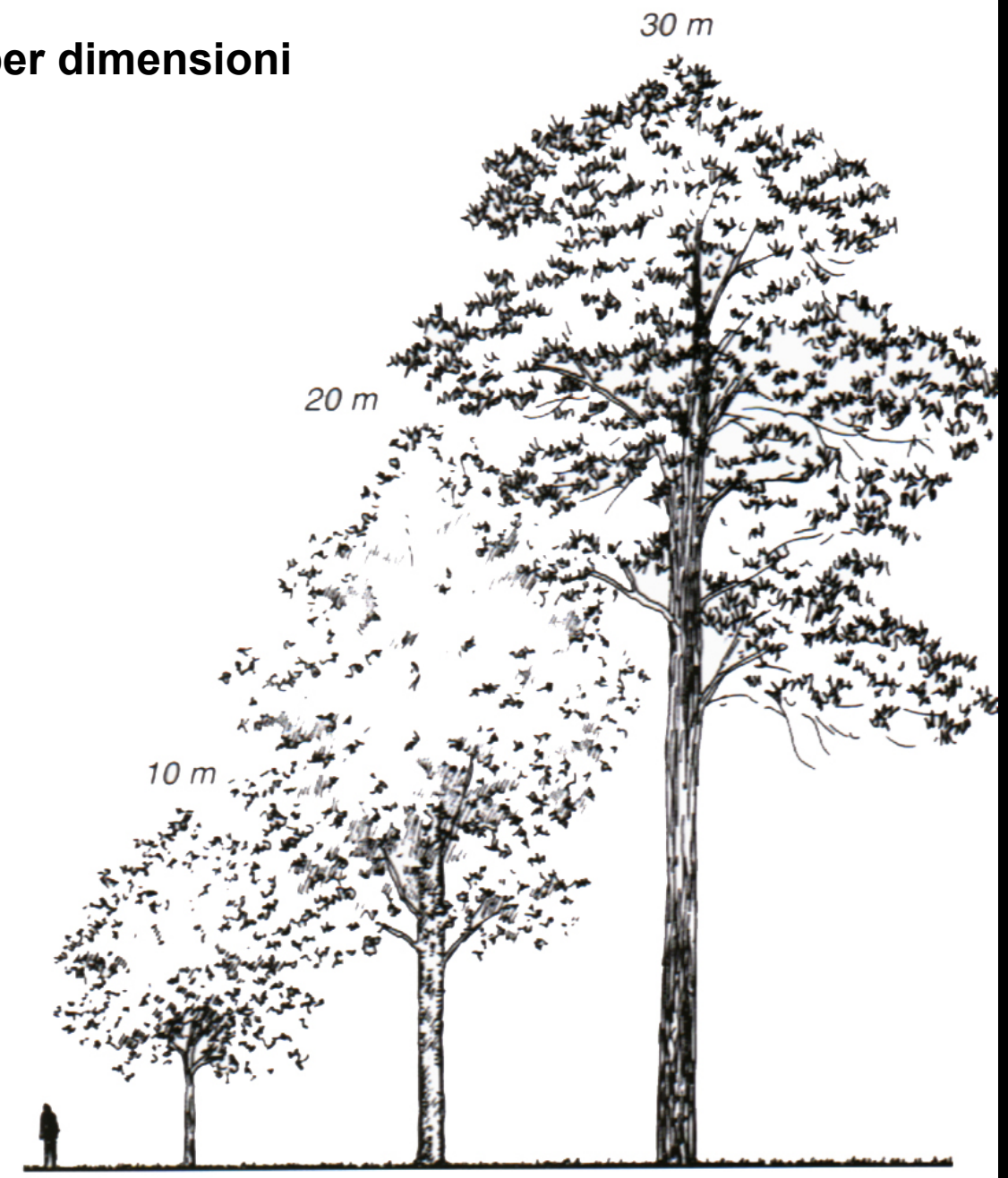
es. platano, pioppo, castagno, acero, cedro, faggio, quercia.

ALBERI DI SECONDA GRANDEZZA
gli alberi che crescono tra i 10 e i 20 m di altezza

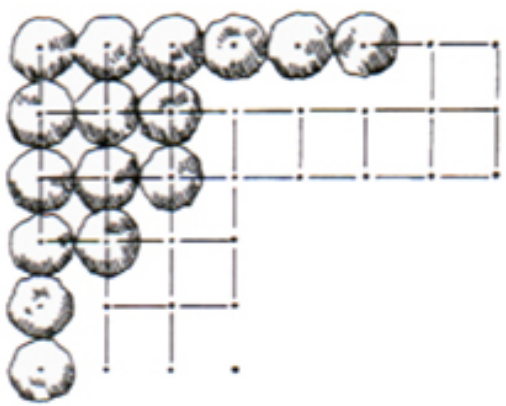
es. tiglio, salice, betulla, acero campestre, tasso pero comune.

ALBERI DI TERZA GRANDEZZA
gli alberi che misurano tra i 5 e i 10 m di altezza

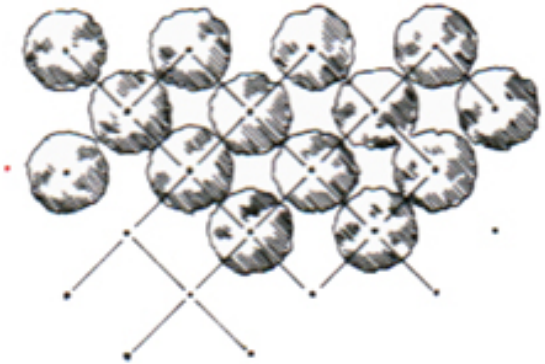
es. melo da fiore, magnolia, ciliegio da fiore, gelso.



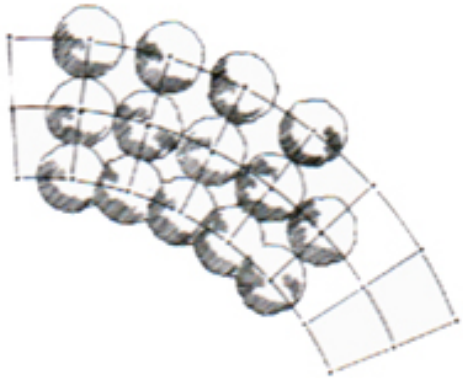
organizzazione spaziale



GRIGLIA ORTOGONALE



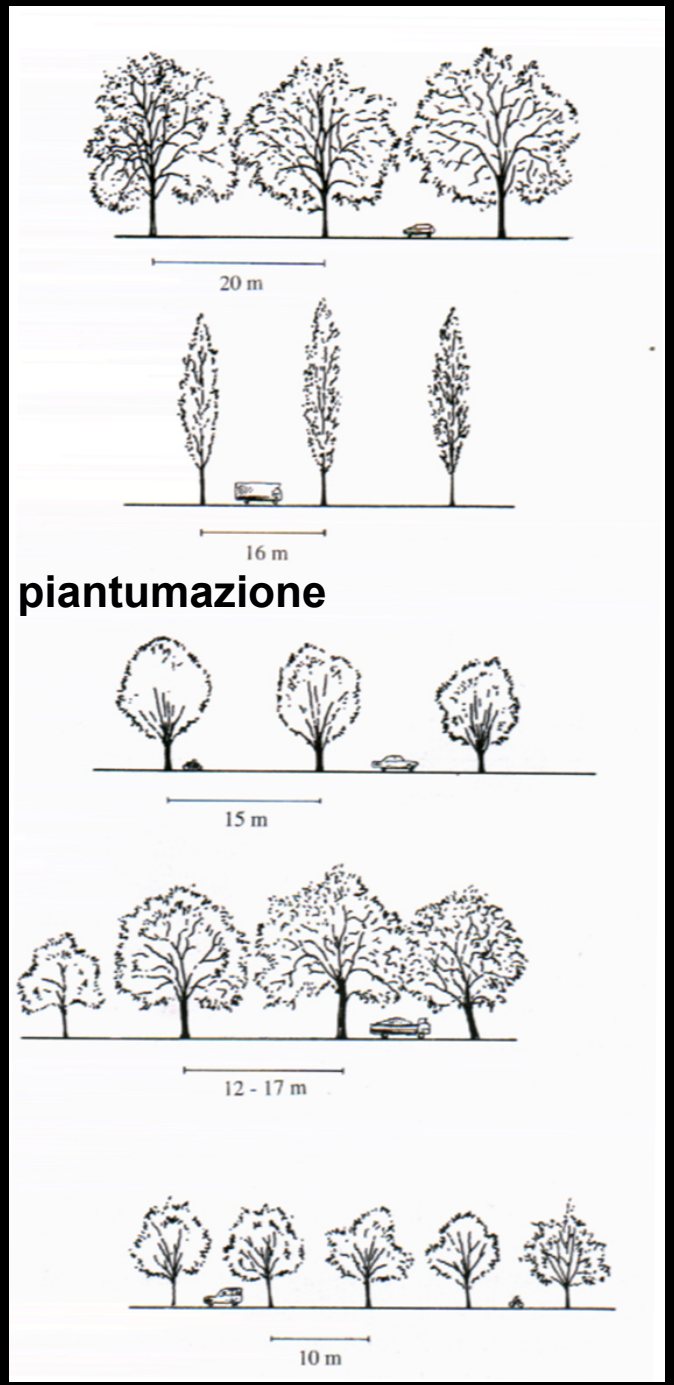
GRIGLIA A QUINCONCE



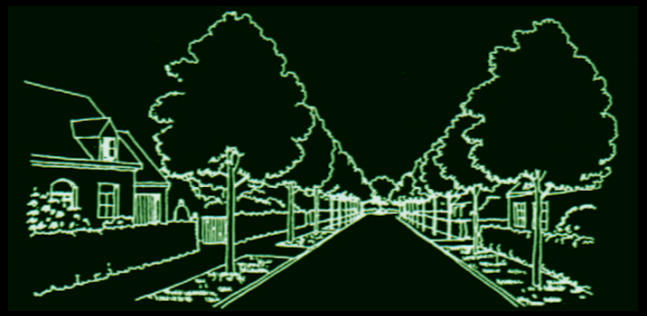
GRIGLIA A RAGGIERA

alberature stradali

distanze di piantumazione

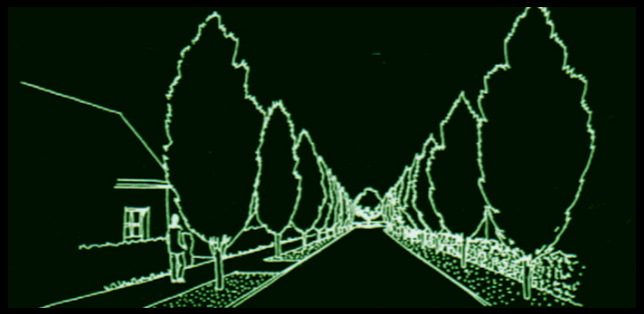


variazioni di forme



allineamento di tigli

allineamento di pini



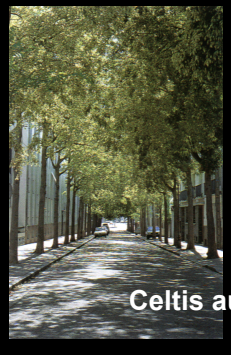
allineamento di carpini piramidali

diversità

Carpinus betulus

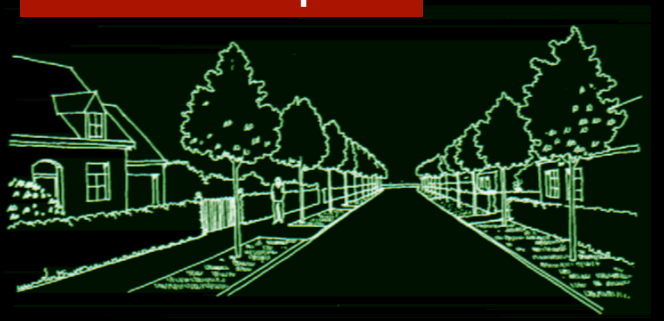
Betulus alba

Liriodendrom tupilifero



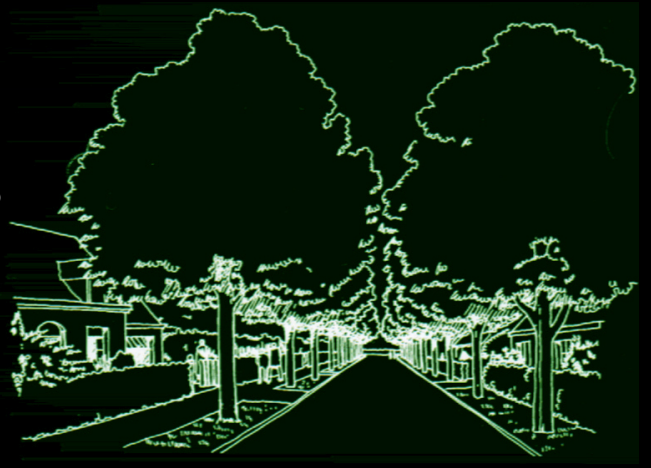
Celtis australis

variazioni temporali

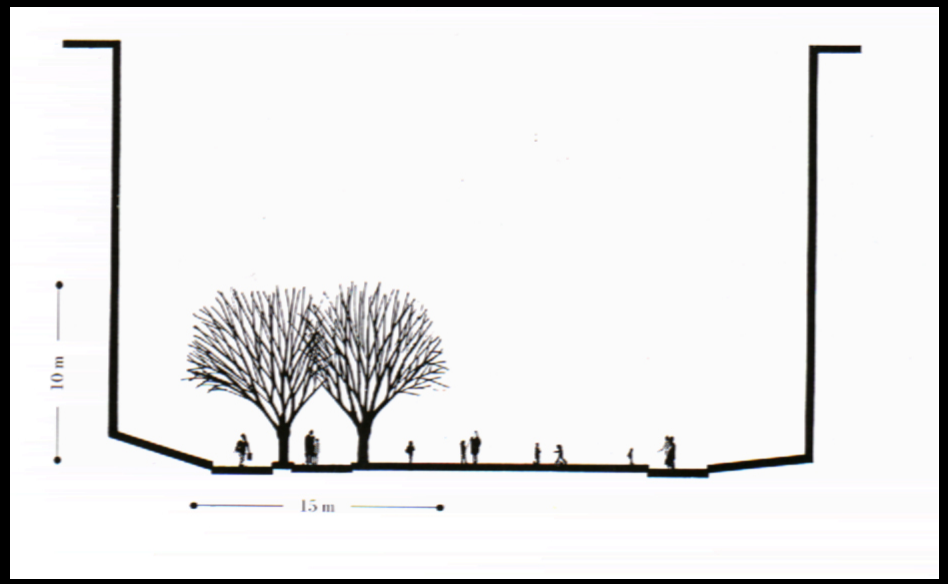


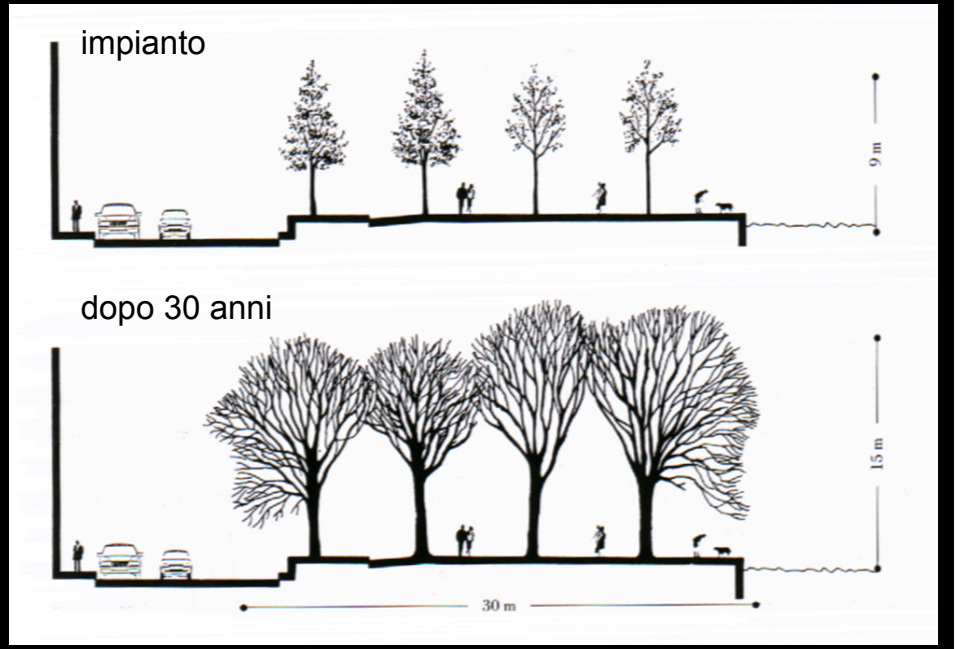
due anni dopo l'impianto

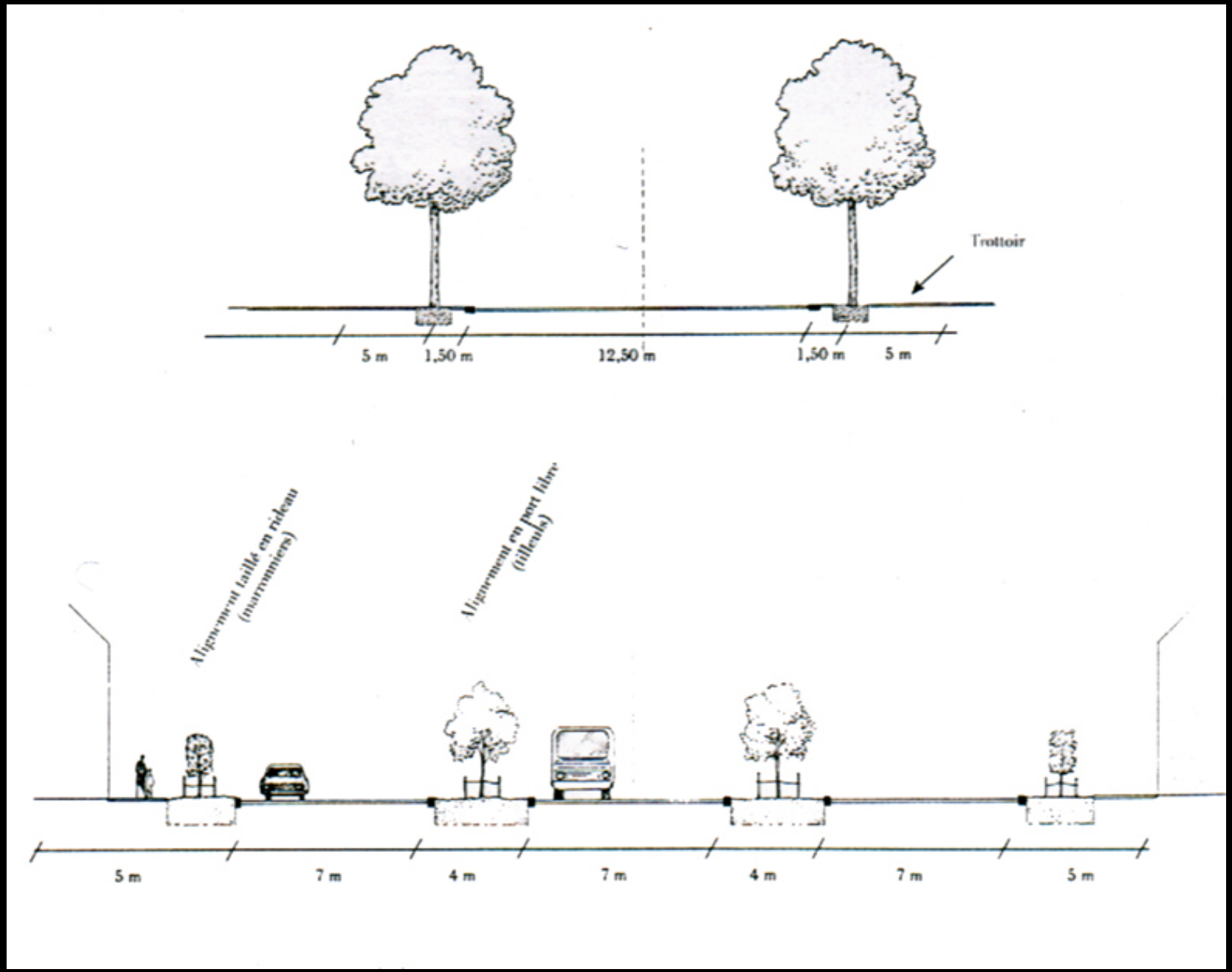
5-7 anni dopo l'impianto

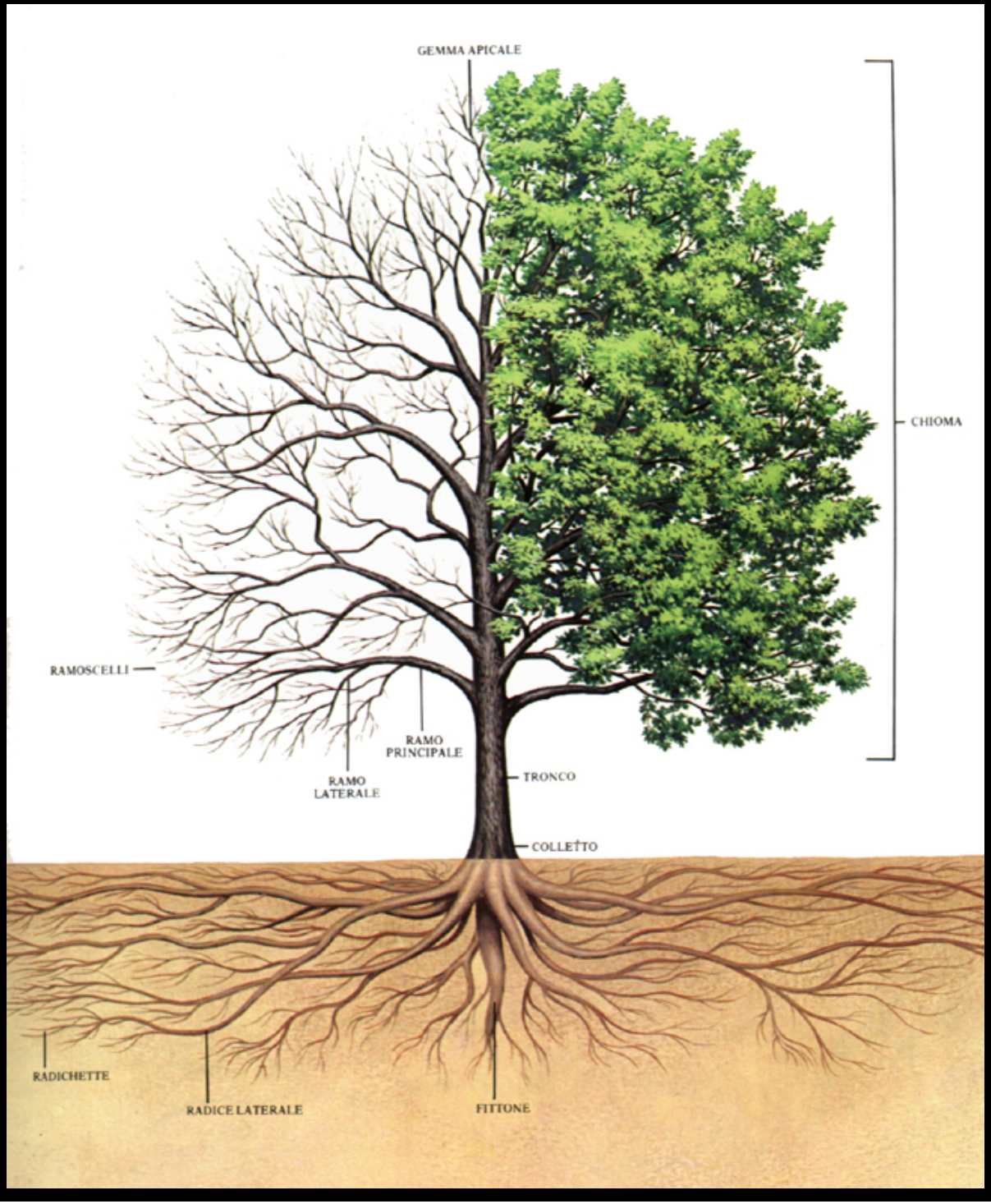


venti anni dopo l'impianto

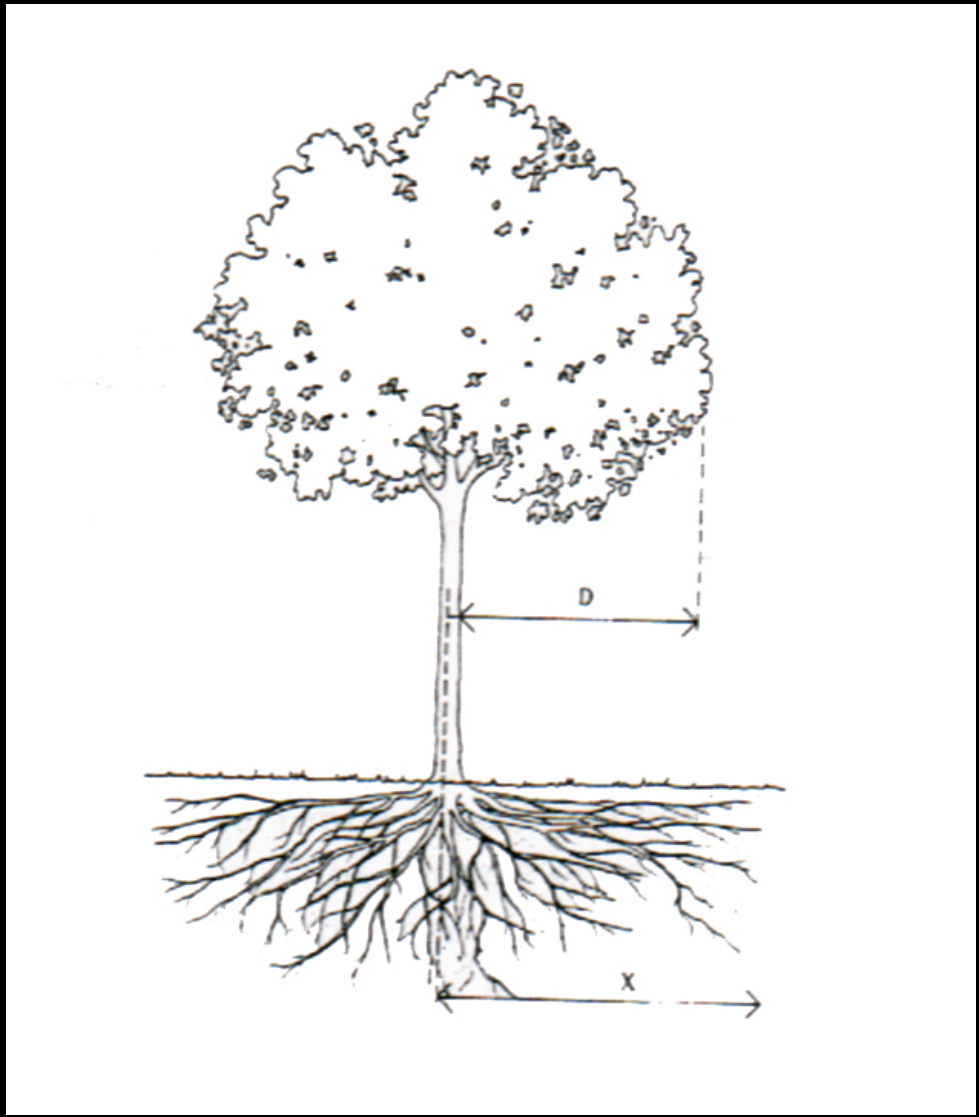

10 m
15 m


impianto
9 m
dopo 30 anni
15 m
30 m


Trottoir
5 m
1,50 m
12,50 m
1,50 m
5 m
Alignement taillé en rideau (marronniers)
Alignement en port libre (tilleuls)
5 m
7 m
4 m
7 m
4 m
7 m
5 m


GEMMA APICALE
CHIOMA
RAMOSCELLI
RAMO PRINCIPALE
RAMO LATERALE
TRONCO
COLLETTO
RADICHETTE
RADICE LATERALE
FITTONE

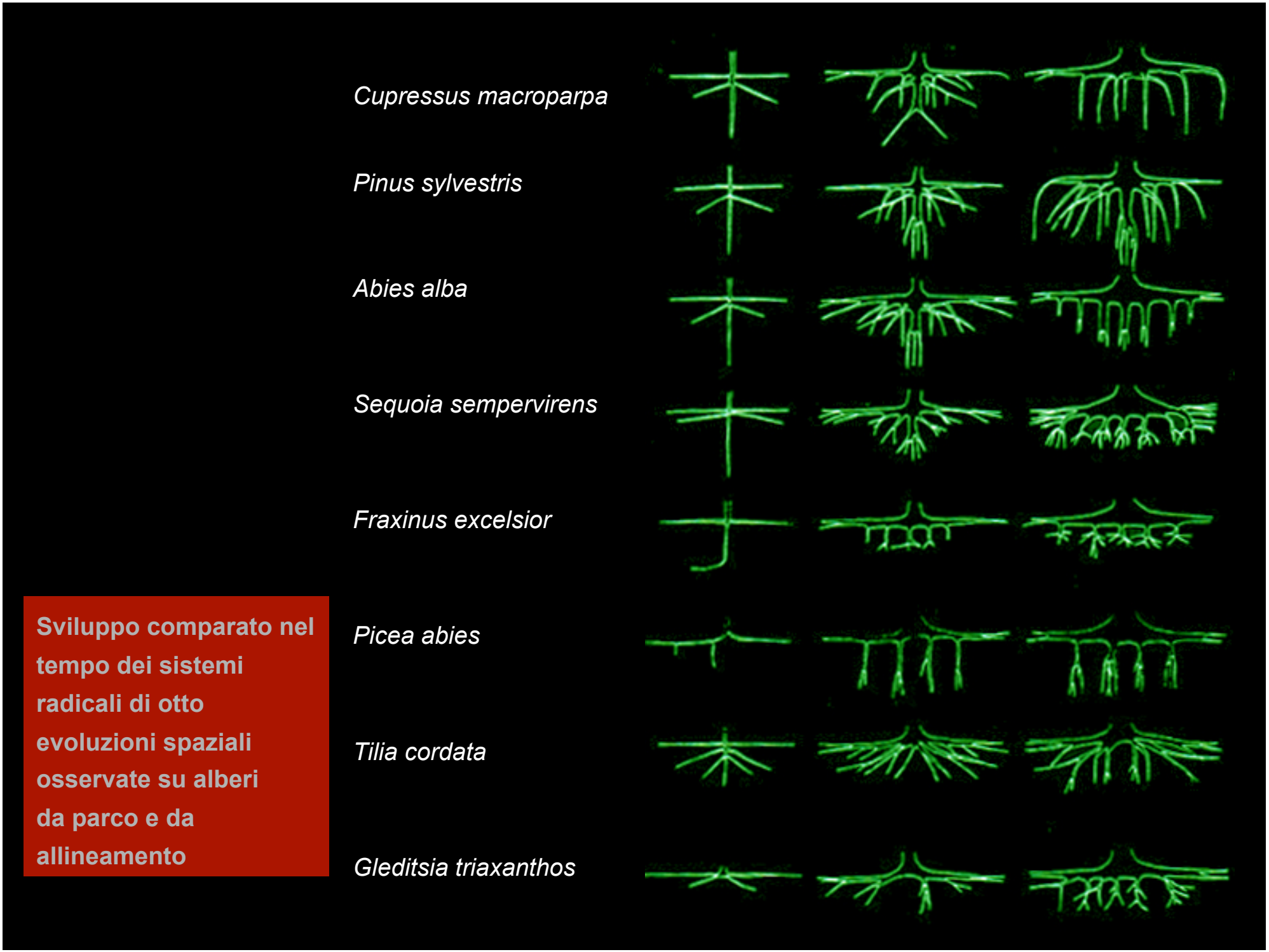
LA COLONIZZAZIONE RADICALE



Variazione dell'estensione radicale x in funzione della distanza D tra il tronco e la proiezione al suolo della chioma. In fase iniziale si può constatare una relazione lineare

esempi:

Magnolia	**x = 3,77 D**
Pioppio	**x = 3,08 D**
Acero	**x = 3,06 D**
Spino di Giuda	**x = 2,95 D**
Frassino	**x = 1,68 D**



Sviluppo comparato nel tempo dei sistemi radicali di otto evoluzioni spaziali osservate su alberi da parco e da allineamento

MORFOLOGIA E SVILUPPO DEL SISTEMA RADICALE DI UN MELO

radici superficiali

strato coltivato areato e fertilizzato

strato di terra sciolta

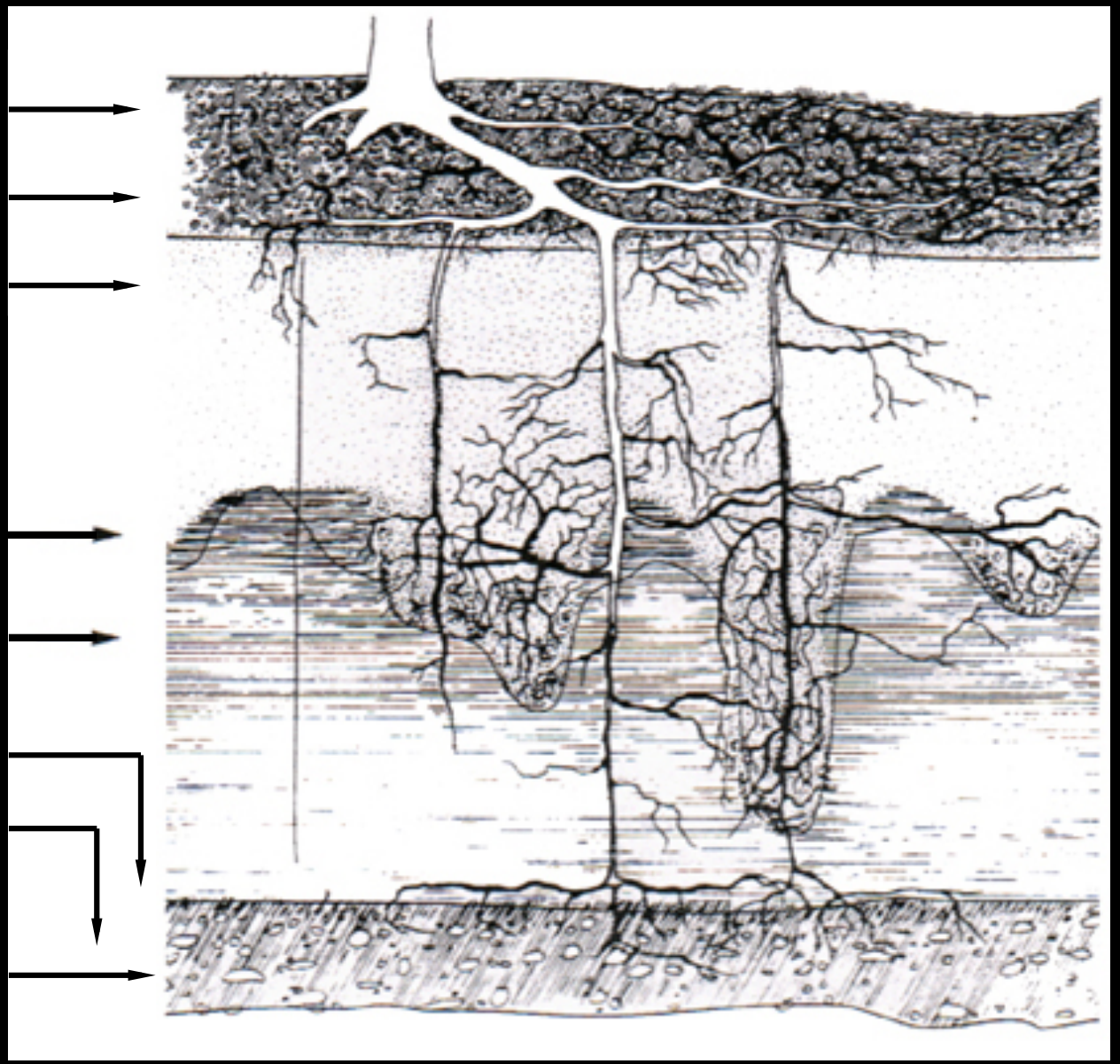
sacche di accumulazione di argilla, acqua, fertilizzante

strato di accumulazione

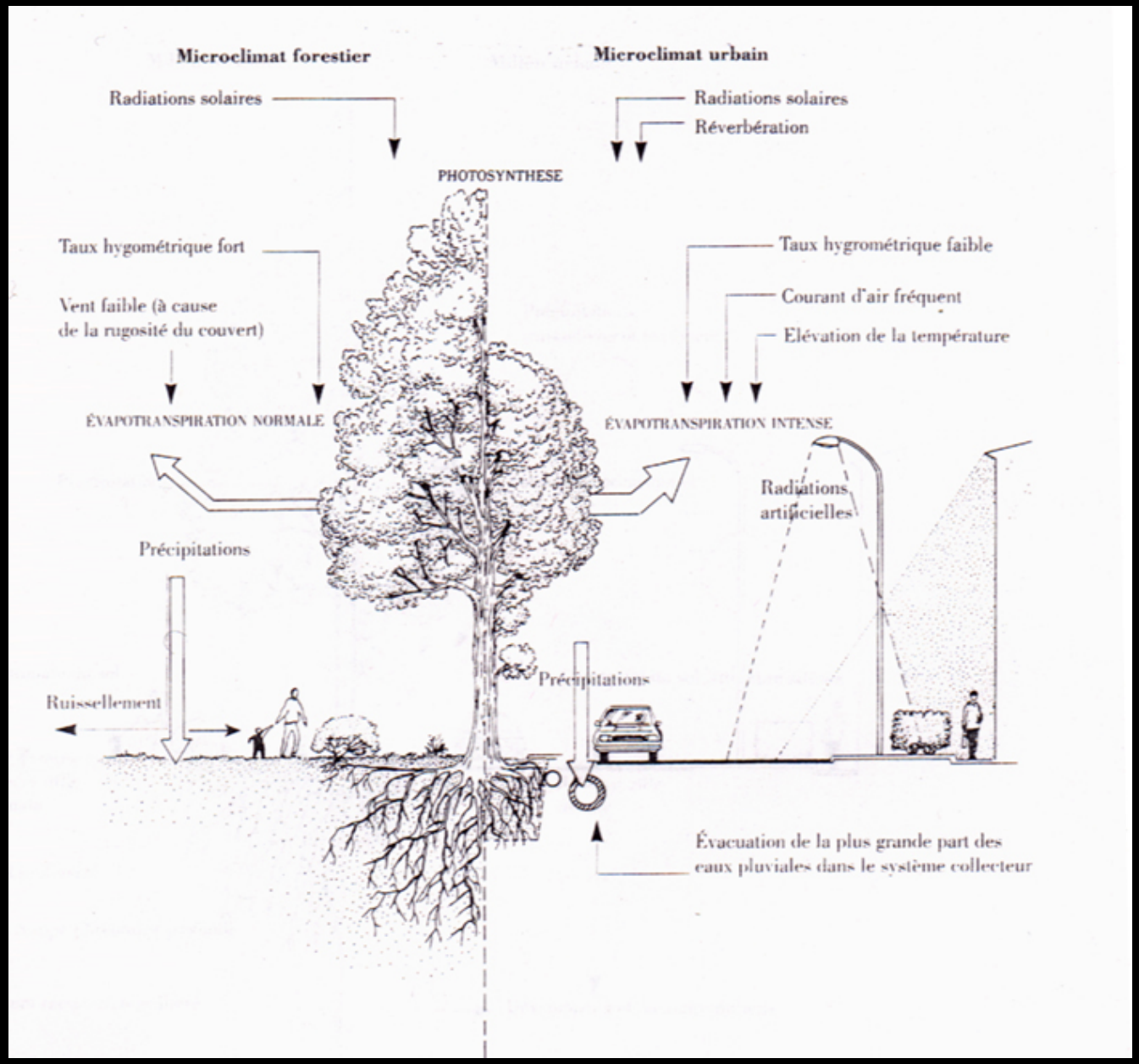
limite del radicamento permanente

roccia madre

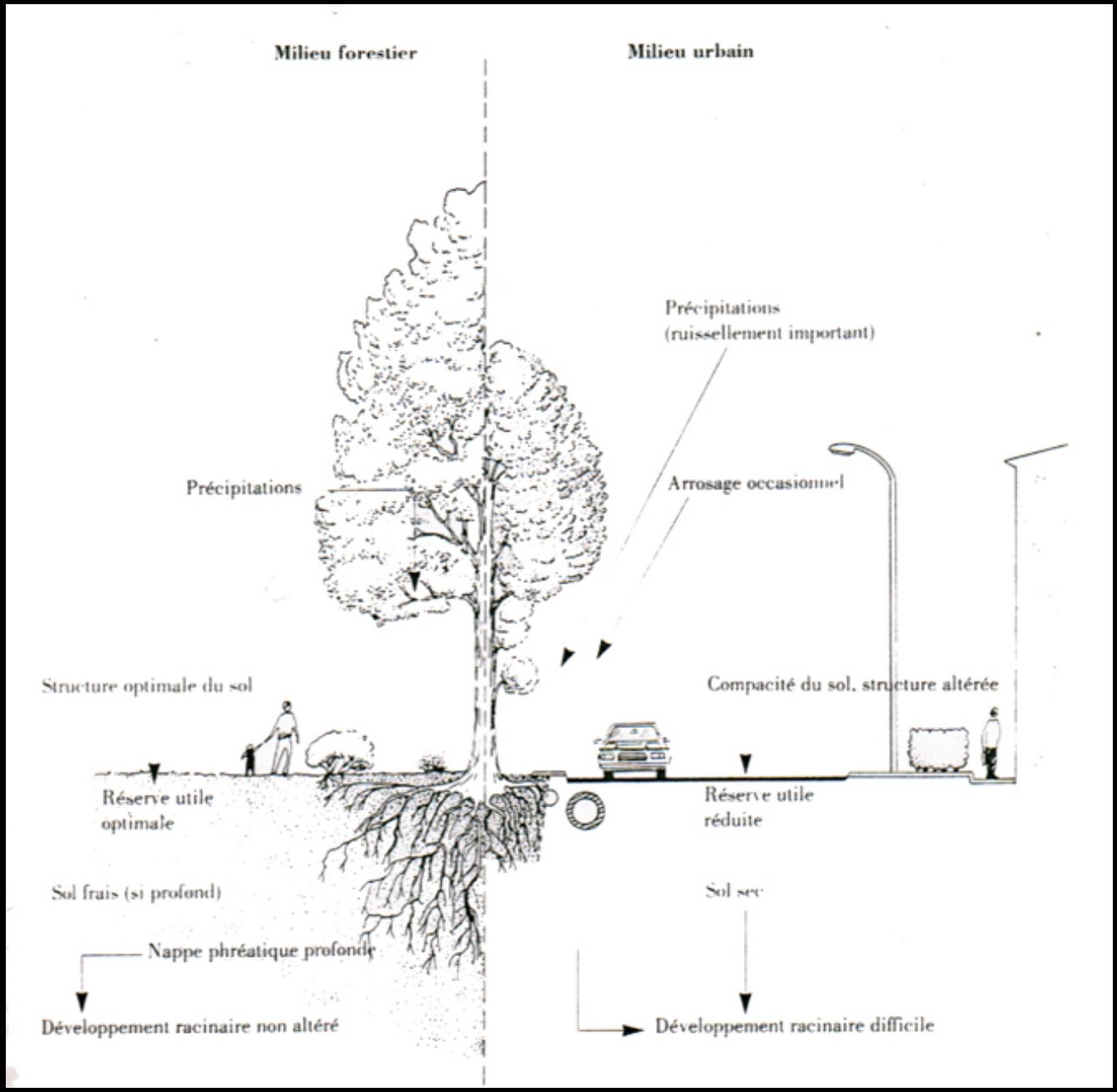
radici profonde



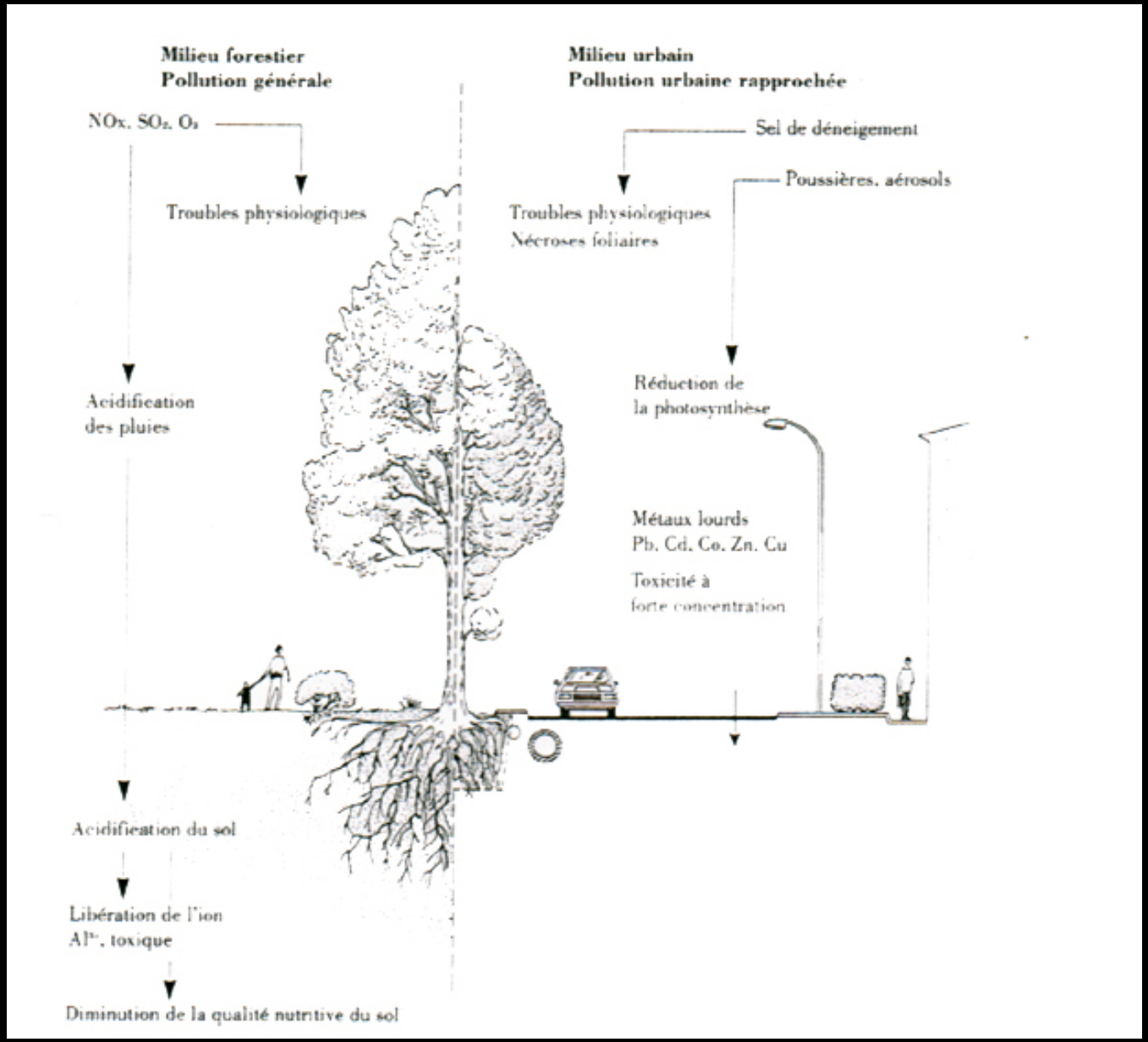
INCIDENZE DEL MICROCLIMA URBANO SULLO SVILUPPO DEGLI ALBERI



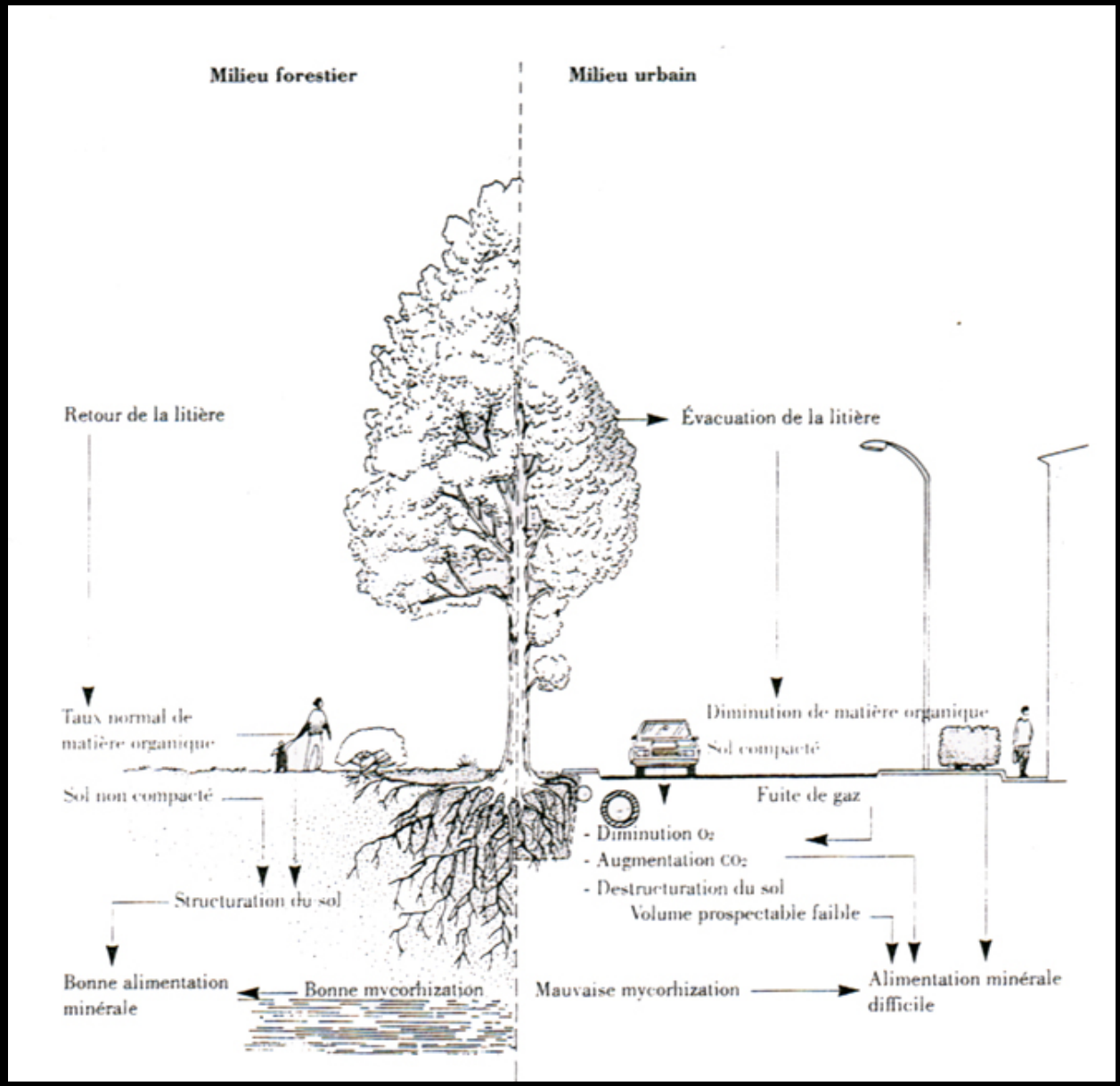
INCIDENZA DEL FATTORE IDRICO SULLO SVILUPPO DEGLI ALBERI



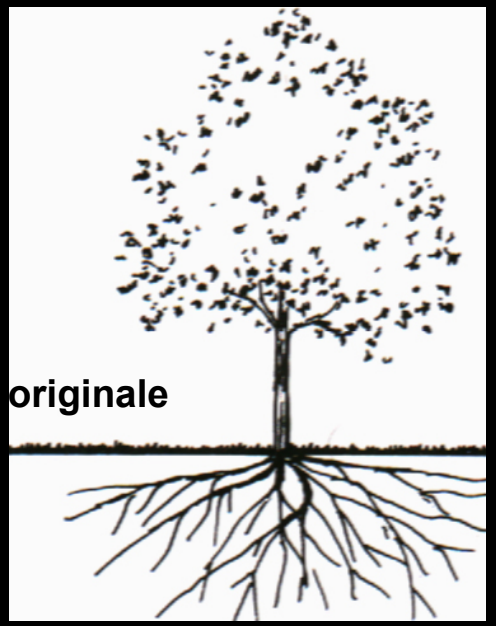
INCIDENZE DELL'INQUINAMENTO SULLO SVILUPPO DEGLI ALBERI



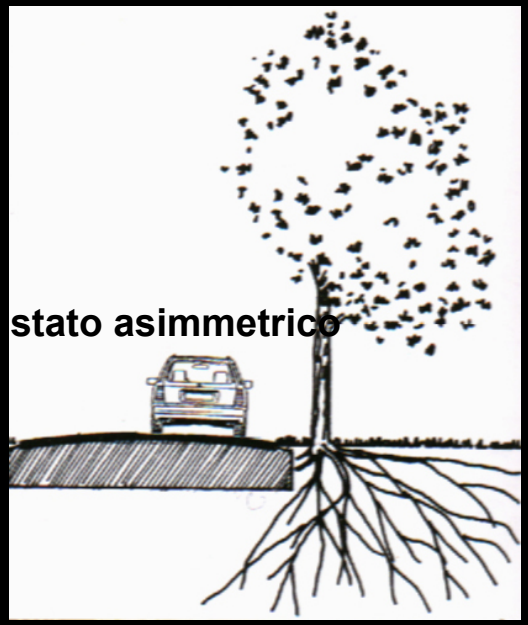
INCIDENZE DELLE CARATTERISTICHE DEL SUOLO SULLO SVILUPPO DEGLI ALBERI



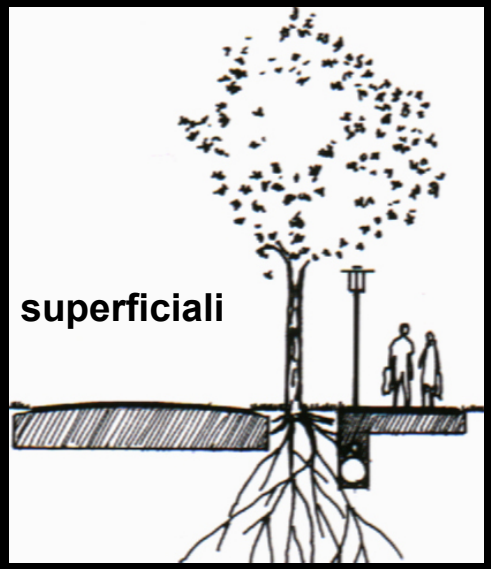
stato originale



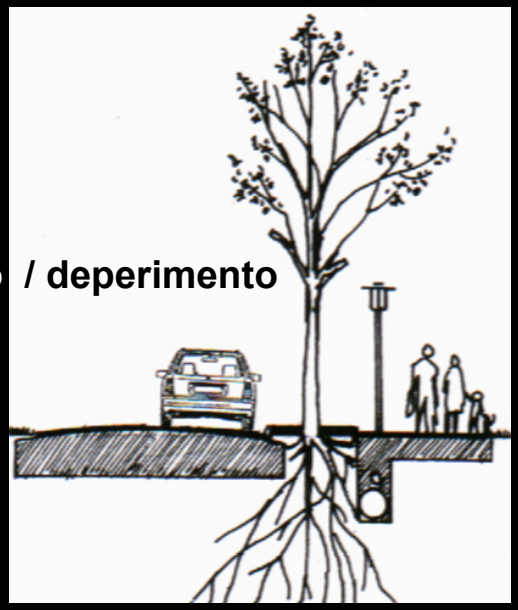
taglio delle radici / stato asimmetrico



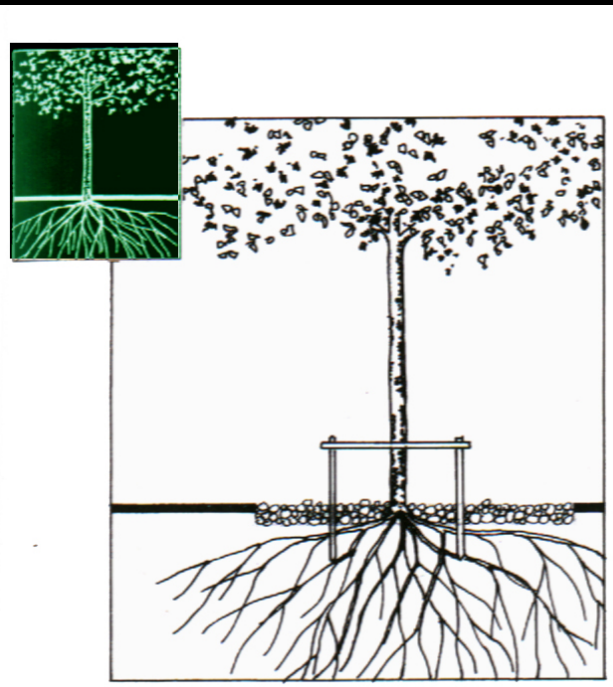
taglio delle radici superficiali



colletto e tronco interrato / deperimento

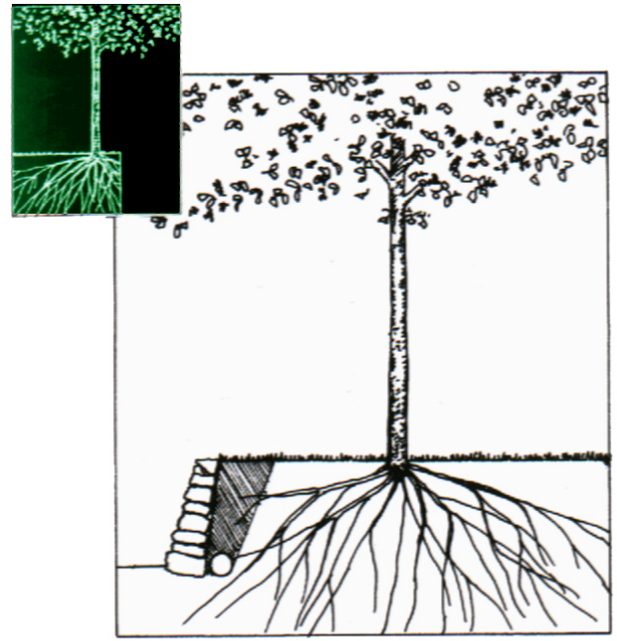


impermeabilizzazione



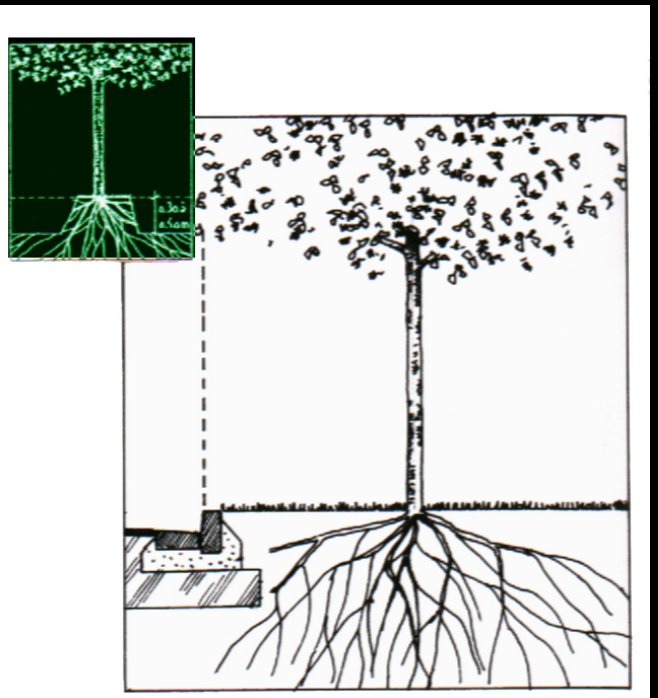
pacciamatura
drenaggio
leggera riduzione della chioma
protezione del tronco

taglio delle radici



distanziare il più possibile il tronco
prevedere un muretto di contenimento
con drenaggio e apporto di terreno
leggera riduzione della chioma

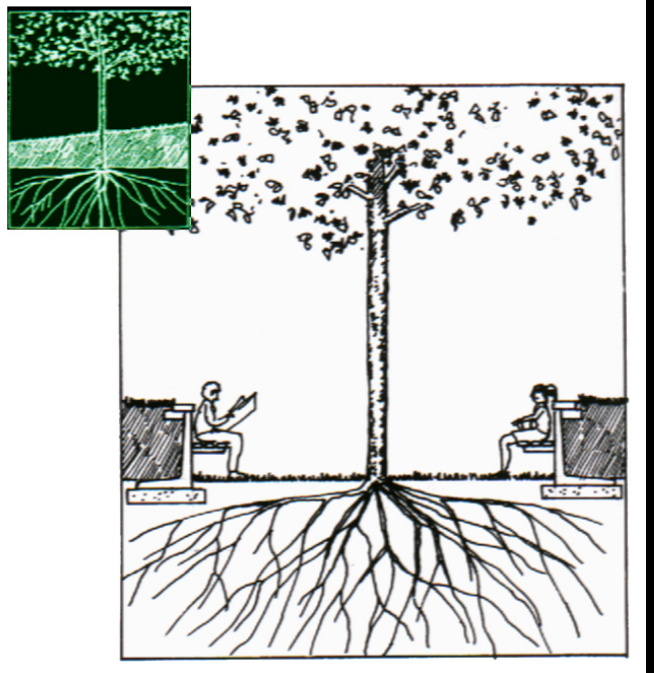
raschiatura del terreno



evitare assolutamente

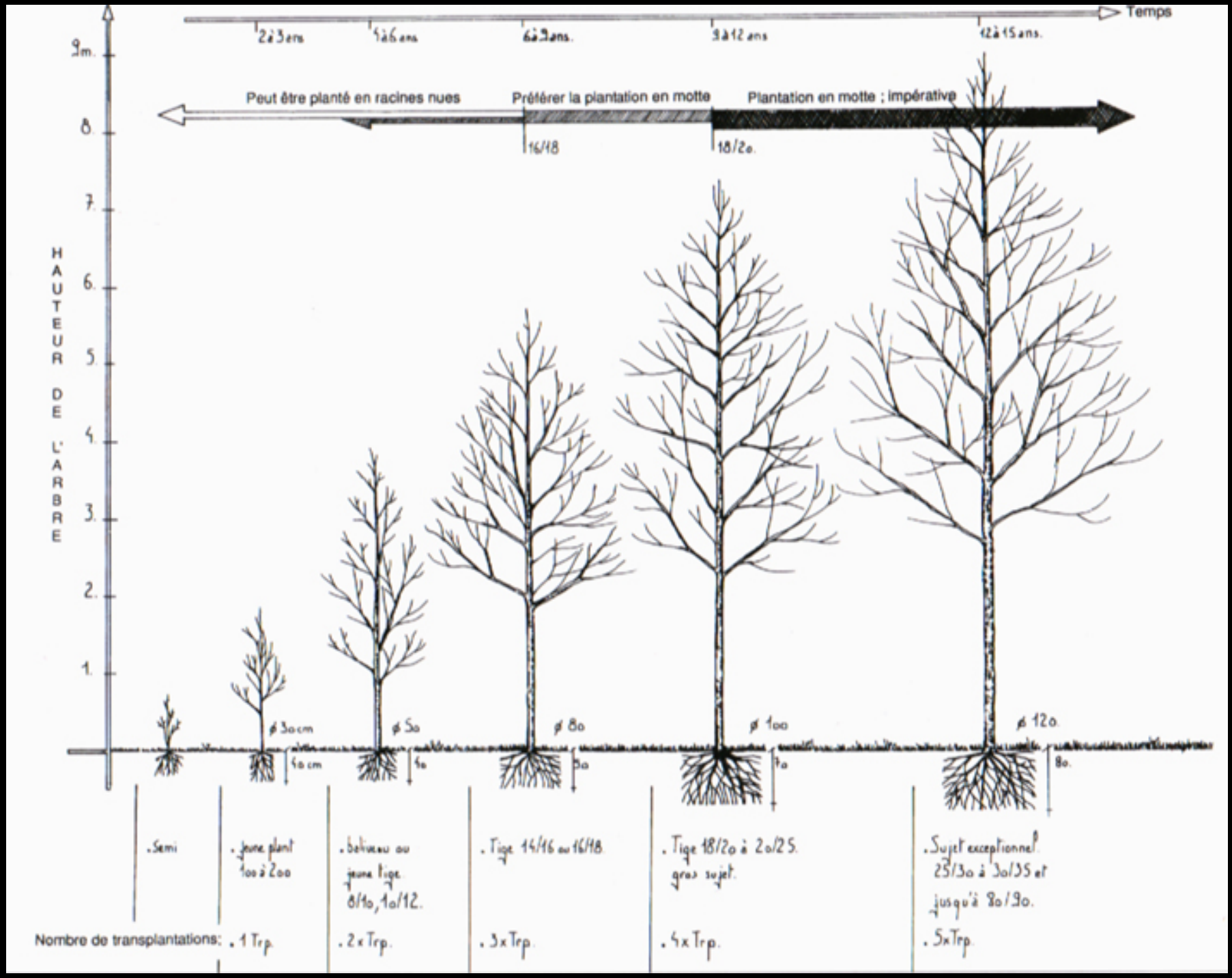
mantenere il livello del suolo per una superficie più larga possibile :
uguale al diametro della chioma

sotterramento tronco e colletto

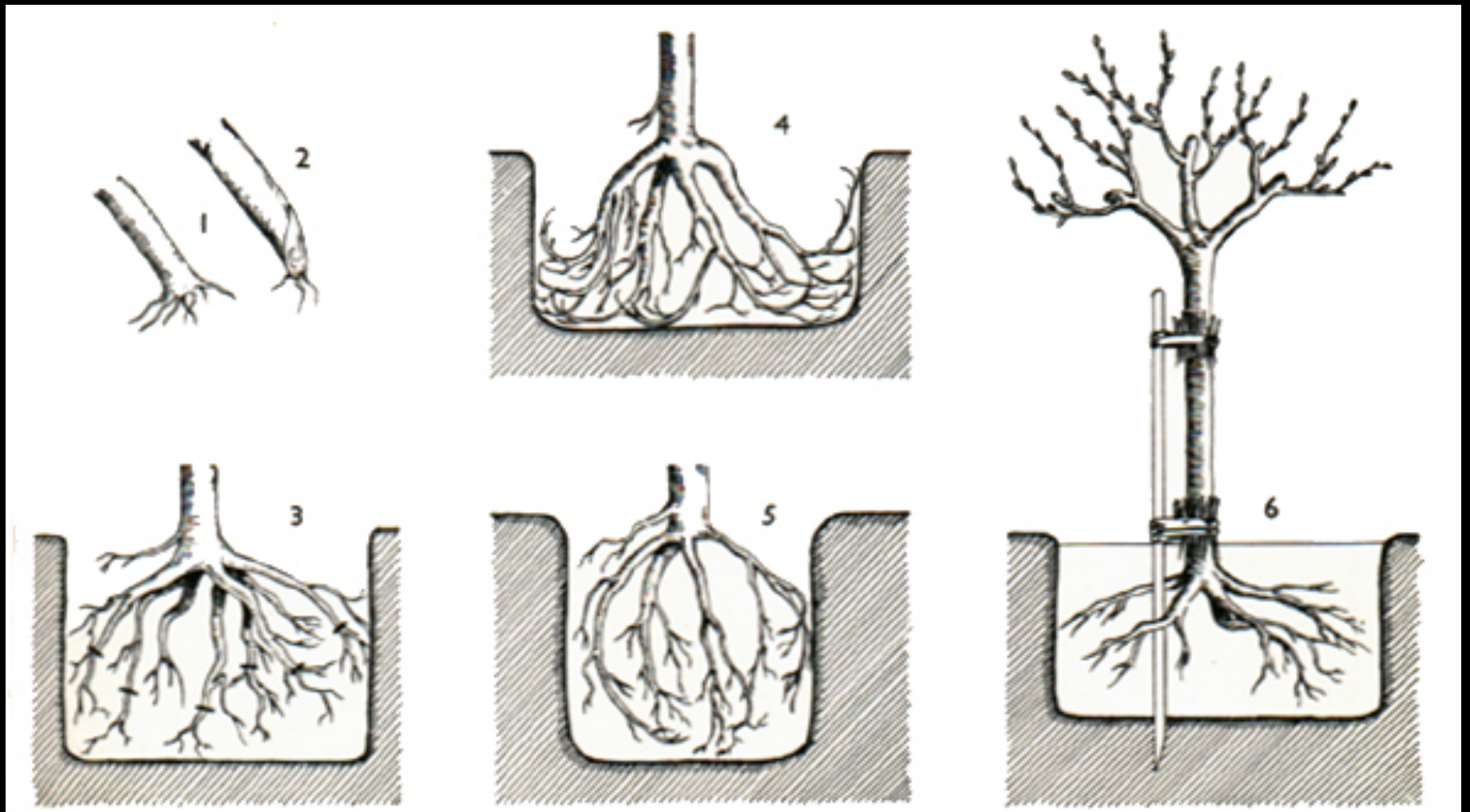


evitare assolutamente di interrare il colletto

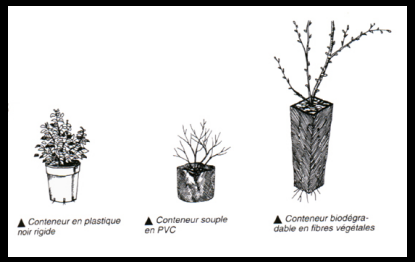
creare un “pozzo” attorno al tronco
sul suolo esistente : drenaggio + letto di ghiaia 20 cm h

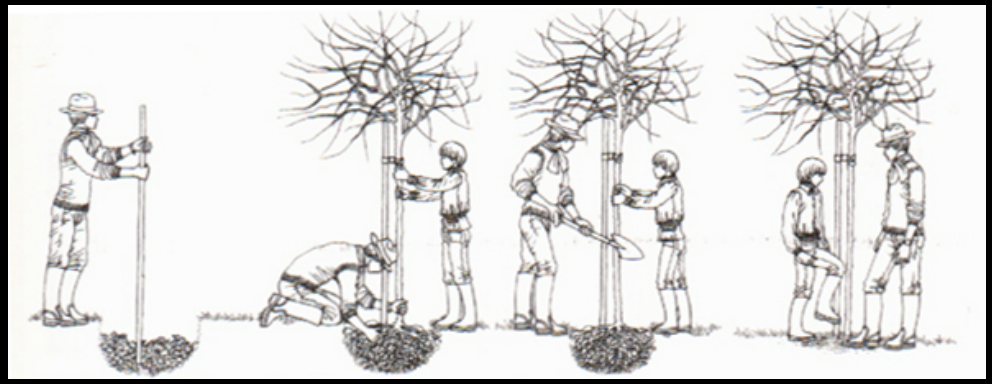

Temps
2 à 3 ans
4 à 6 ans
6 à 9 ans.
9 à 12 ans
12 à 15 ans.
Peut être planté en racines nues
Préférer la plantation en motte
Plantation en motte ; impérative
16/18
18/20.
HAUTEUR DE L'ARBRE
9m.
8.
7.
6.
5.
4.
3.
2.
1.
ϕ 30 cm
40 cm
ϕ 50
40
ϕ 80
80
ϕ 100
100
ϕ 120
80.
. Semi
. Jeune plant 100 à 200
. Baliveau ou jeune tige. 8/10, 10/12.
. Tige 14/16 ou 16/18.
. Tige 18/20 à 20/25. gros sujet.
. Sujet exceptionnel 25/30 à 30/35 et jusqu'à 80/90.
Nombre de transplantations:
. 1 Trp.
. 2 x Trp.
. 3 x Trp.
. 4 x Trp.
. 5 x Trp.

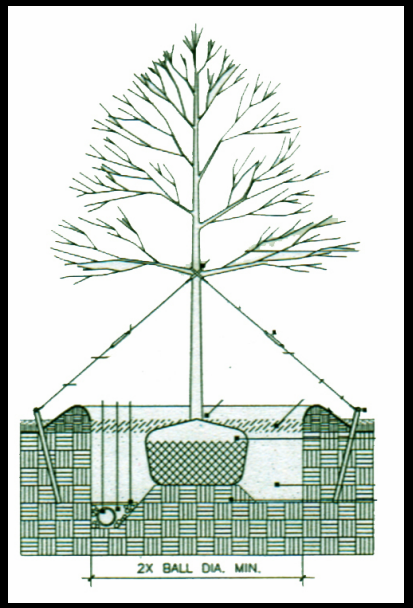
impianto - opere preparatorie - albero

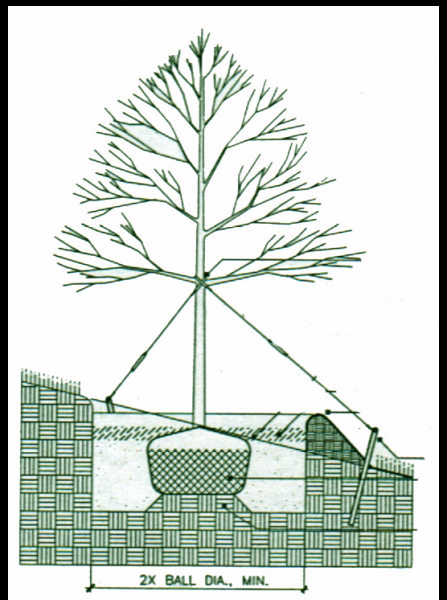


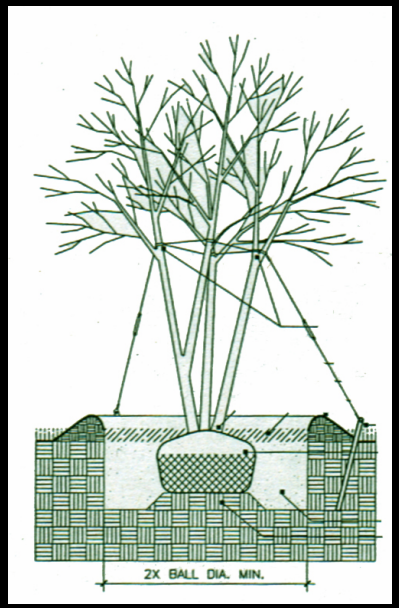
Préparation et plantation des arbres : 1. Bonne coupe des racines; 2. Mauvaise coupe; 3. Arbre bien mis en place; 4 et 5. Mauvaises mises en place; 6. Le tuteur doit être enfoncé dans le sol non ameubli. *(D'après L. Chasset.)*

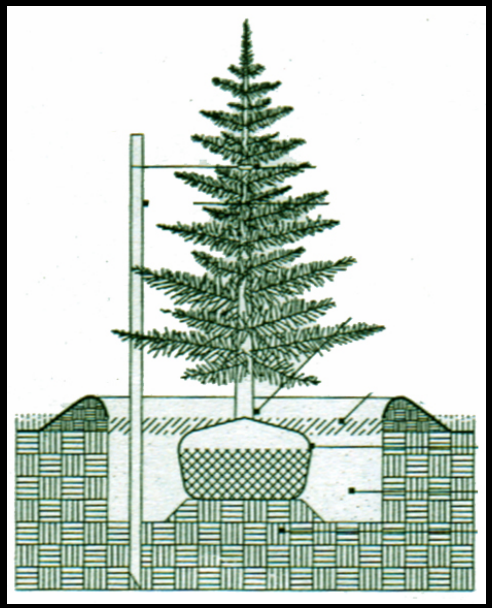










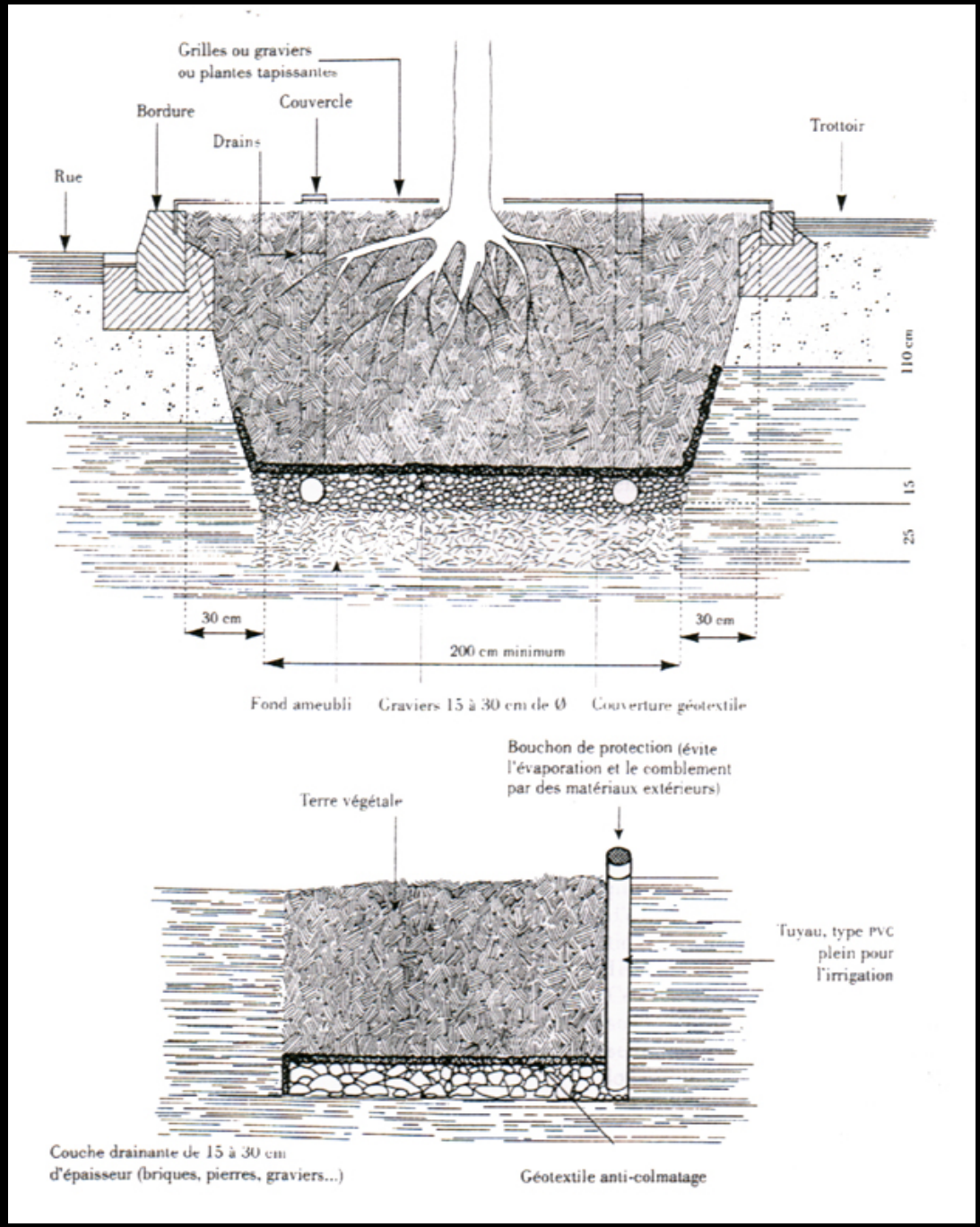


dimensioni buche di impianto :

piante arboree	**100 x 100 x 80 cm**
grandi arbusti e cespugli	**70 x 70 x 70 cm**
piccoli arbusti, cespugli e piante tappezzanti	**40 x 40 x 40 cm**
alberature stradali ed esemplari	**150 x 150 x 150 cm**

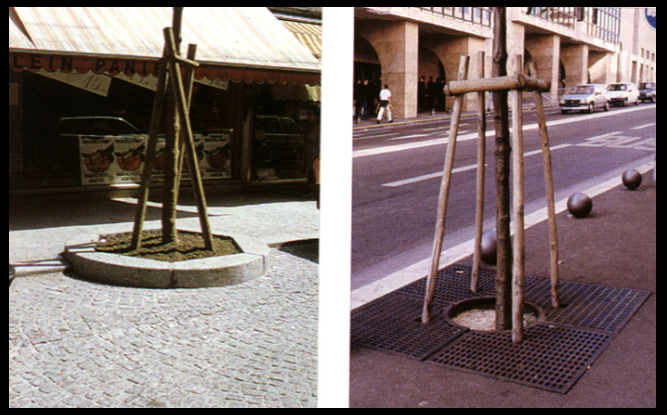
espianto e trapianto meccanico

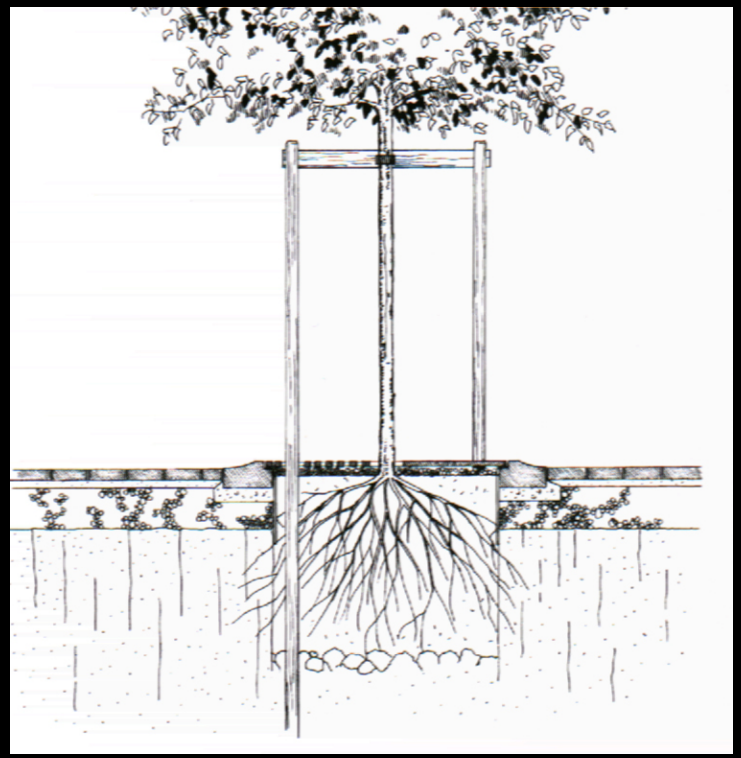
alimentazione

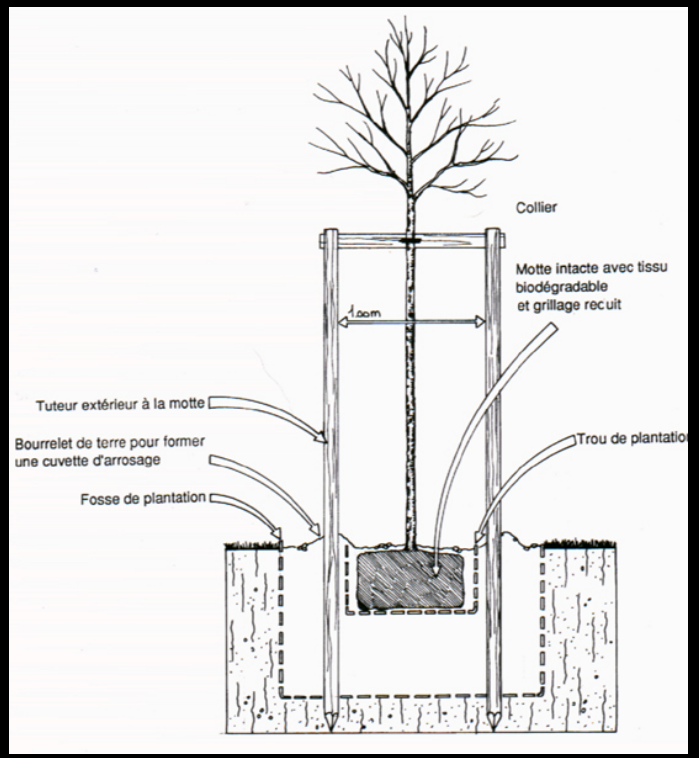


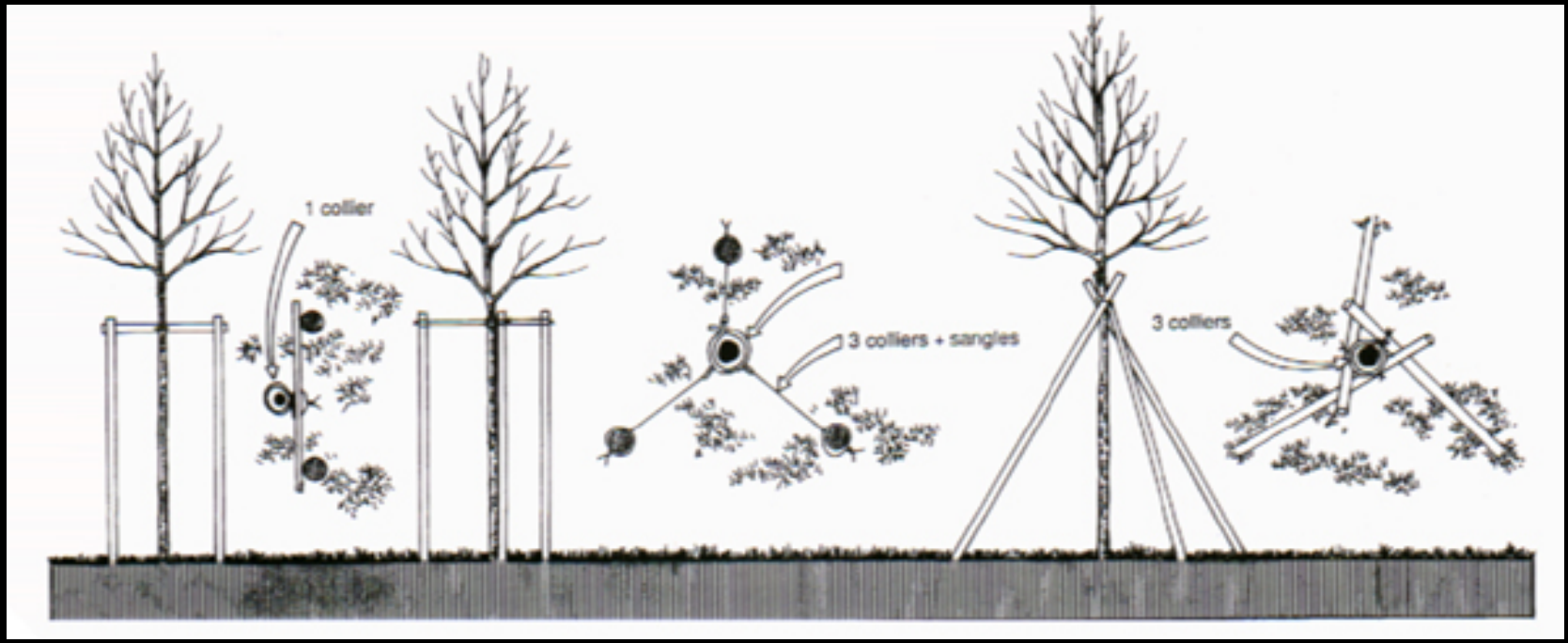
irrigazione della zolla

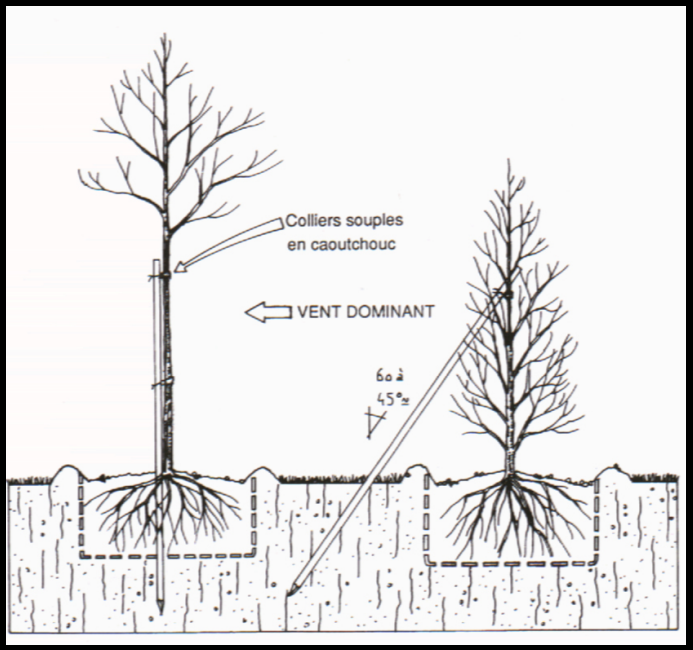
tutoraggio

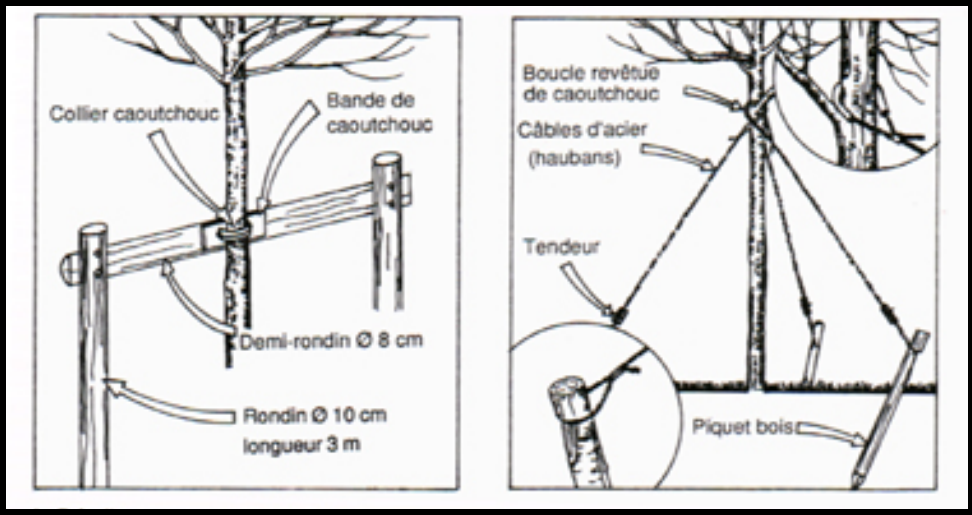




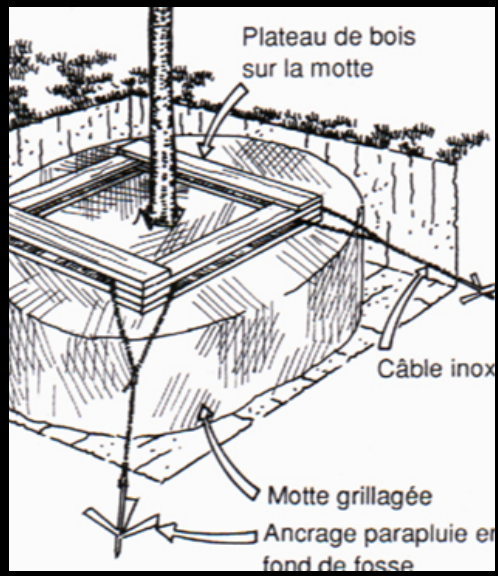

Collier
Motte intacte avec tissu biodégradable et grillage recuit
1.00m
Tuteur extérieur à la motte
Bourrelet de terre pour former une cuvette d'arrosage
Fosse de plantation
Trou de plantatio


1 collier
3 colliers + sangles
3 colliers

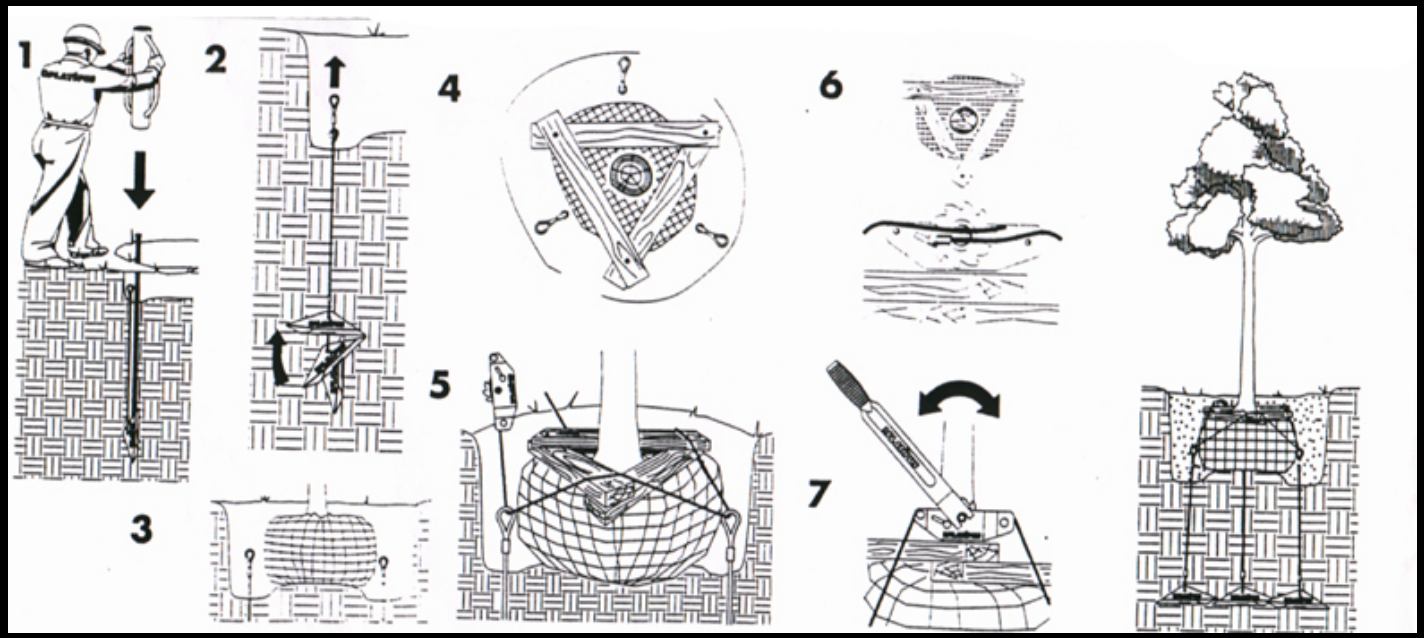

Colliers souples
en caoutchouc
VENT DOMINANT
60 à
45°


Collier caoutchouc
Bande de
caoutchouc
Demi-rondin Ø 8 cm
Rondin Ø 10 cm
longueur 3 m
Boucle revêtue
de caoutchouc
Câbles d'acier
(haubans)
Tendeur
Piquet bois

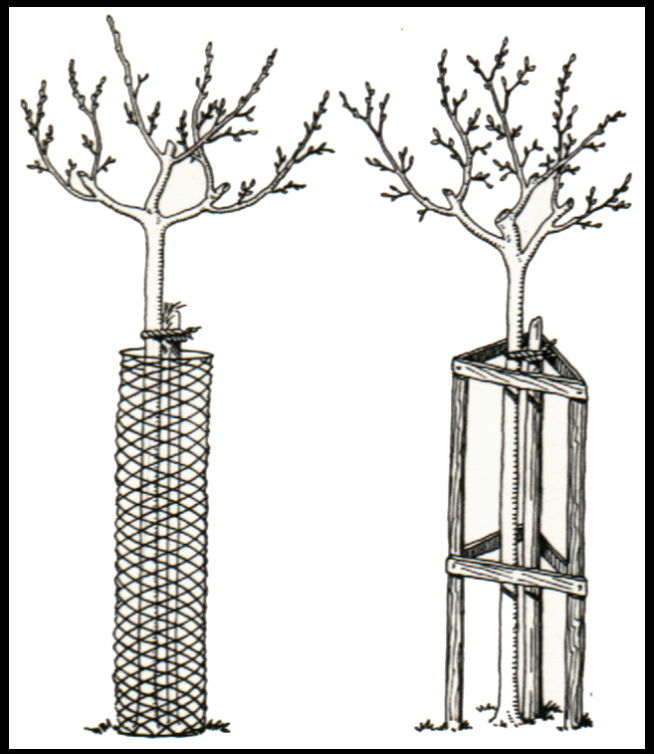
tutoraggio a scomparsa

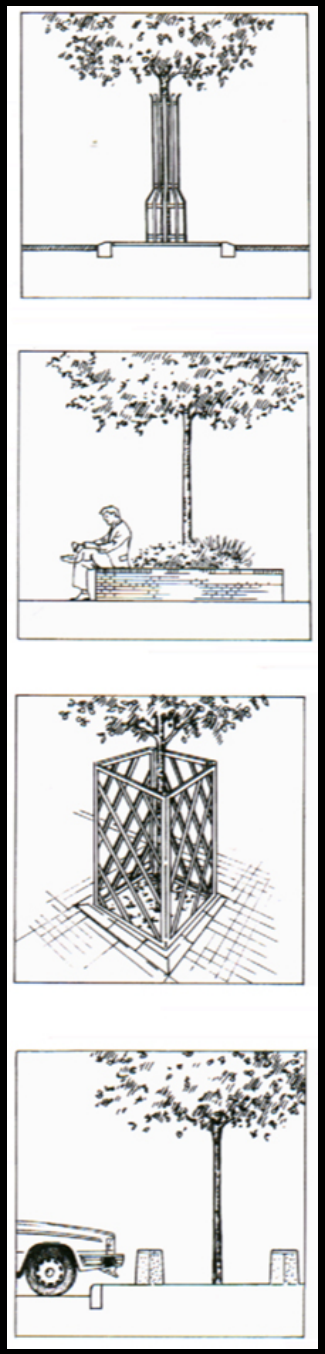


fasi di fissaggio



protezione del tronco





fasciature

pacciamatura

COMPOSTA DA FUNGICOLTURA

È una mescolanza di letame equino, torba e calce preparata dai fungicoltori. Utilissima, anche se alcalina, come condizionatore del terreno. Da non usare su piante acidofile.

ELEMENTI NUTRITIVI	
Azoto	0,71%
Fosforo	0,3%
Potassio	0,26%
Microelementi	tutti

CASCAMI DI LANA

Questo materiale di scarto proviene dal processo di lavorazione delle fibre allorché vengono preparate per la filatura e la tinteggiatura. Il contenuto di elementi nutritivi può variare molto.

ELEMENTI NUTRITIVI	
Azoto	3-15%
Fosforo	0,5-10%
Potassio	0,1-12%
Microelementi	—

ALGHE

Ottime per il condizionamento del terreno in quanto l'alginato in esse contenuto aiuta a legare le particelle e quindi migliora la struttura. Ricche anche di microelementi.

ELEMENTI NUTRITIVI	
Azoto	0,3%
Fosforo	0,1%
Potassio	1,0%
Microelementi	tutti

CORTECCIA DI PINO COMPOSTATA

È generalmente venduta già in parte compostata e non contiene elementi nutritivi. È meglio usarla come pacciamatura: interrata può provocare gravi carenze di azoto.

ELEMENTI NUTRITIVI	
Azoto	—
Fosforo	—
Potassio	—
Microelementi	—

INFIORESCENZE DI LUPPOLO

Se abitate vicino a una fabbrica di birra, potete cercare di procurarvi le infiorescenze usate di luppolo; sono adatte come pacciamatura e come concime organico.

ELEMENTI NUTRITIVI	
Azoto	0,5%
Fosforo	1-2%
Potassio	0,5%
Microelementi	tutti

TORBA

È utile come sostanza organica, ma non ha valore nutritivo. La sua importanza sta nel potere di miglioramento della struttura del terreno e di ritenzione idrica.

ELEMENTI NUTRITIVI	
Azoto	—
Fosforo	—
Potassio	—
Microelementi	—

protezione