

芭乐的种植和管理 (Part 2)

1	Flower, fruit and uses	花, 果实和用途
2	Health benefits	健康益处
3	Climate and Photoperiod	气候和光周期
4	Soil	土壤
5	Planting	种植
6	Fertilizing	施肥
7	Watering	浇水
8	Tree Care	果树管理
9	Overwintering	过冬保护
10	Propagation	繁殖
11	Pest management	虫害处理
12	Disease management	病害处理

6. 施肥

Guavas are fast growers and heavy feeders, and benefit from regular applications of fertilizer. Mature trees may require as much as 1/2 pound actual nitrogen per year. Apply fertilizer monthly if you could

环绕树覆盖1-2英寸的腐殖土


Apply one to two inches of Organic compost
around the tree

And you do not need to apply any more fertilizer !!



Fertilizer: Balanced NPK plus Magnesium





Home & Garden

MAGNESIUM SULFATE

FOR USE IN CORRECTING MAGNESIUM DEFICIENCY IN PALMS, TREES, SHRUBS AND OTHER PLANTS.

FOR PALMS: 1/2 to 5 pounds per palm, depending on size. Preventative applications may be applied 2-4 times per year. Water in thoroughly.

FOR SHRUBS AND TREES USE: 1/2 to 1 pound per 5 feet of width. Use proportionally less for smaller shrubs. Water in thoroughly.

FOR AREA TREATMENT USE: 1 to 2 pounds per 100 square feet.

FOR VEGETABLE USE: 1/4 to 1 pounds per 100 square feet. (see back panel for more information)

Guaranteed Analysis

Total Magnesium as Mg	16.0%
16.0% Water Soluble Magnesium as Mg	

Derived from: Magnesium Sulfate
Guaranteed By: Southern Agricultural Insecticides, Inc.
P.O. Box 218, Palmetto, FL 34220

KEEP OUT OF REACH OF CHILDREN

CAUTION


May be harmful if swallowed.
Avoid breathing dust.
May cause irritation of skin and eyes.
Wash thoroughly after using.
May cause injury to tender plant parts - do not allow dry material to stay on foliage.

NOTE: This material is fertilizer grade and can not be used medically or in animal feeds, and is not soluble enough for spray application.

Southern Agricultural Insecticides, Inc.

Palmetto, FL 34220	Hendersonville, NC 28793	Boone, NC 28607
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F672-750 J6 **NET WEIGHT: 5 lbs. (2.27 kg.)**

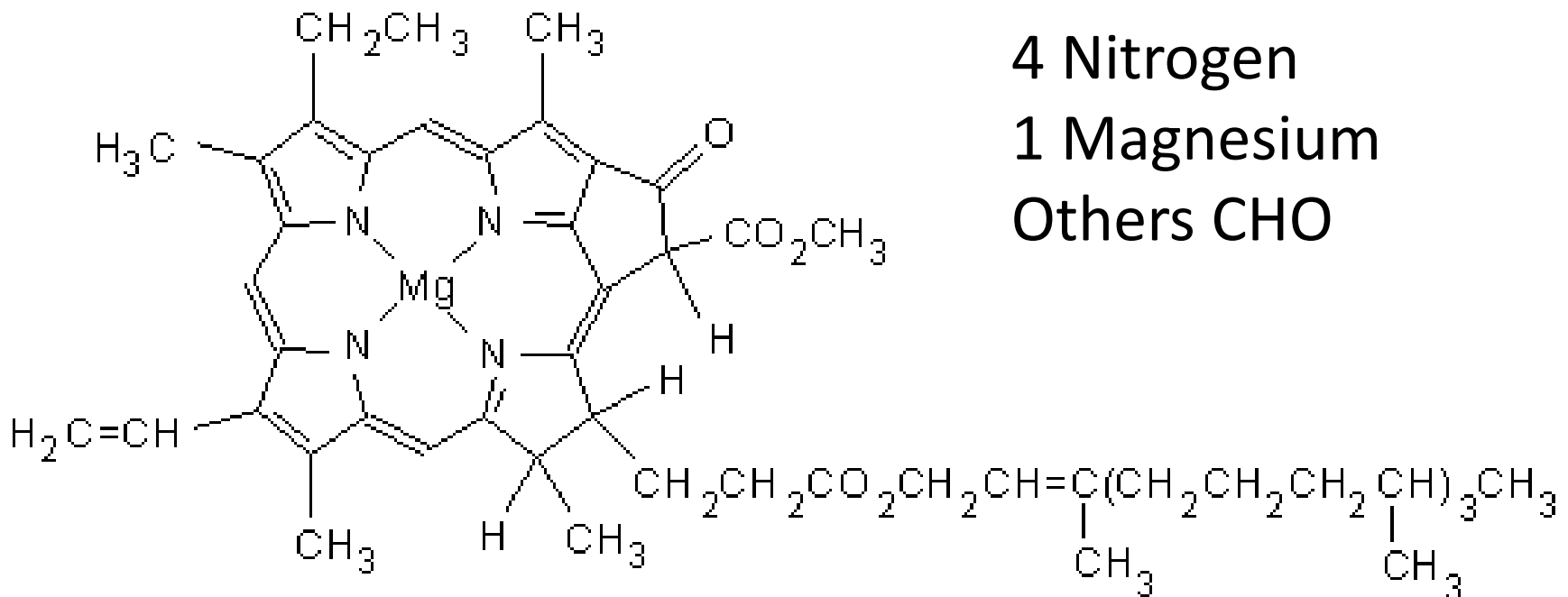


叶绿素

Chlorophyll

Nitrogen and magnesium are part of chlorophyll that make food

Intensity of green color of leaf indicate the Nitrogen sufficiency



N P K Definition

THE LEAF MAKER

NITROGEN

N

- Production of new cells and enzymes.
- Production of green pigments.
- Responsible for leaf and stem growth.
- Helps plants with rapid growth.

THE FLOWER INDUCER / FRUIT MAKER

POTASSIUM

K

- Encourages uptake of water.
- Essential in the development of flowers and fruits.
- Increases plants resistance to diseases.
- Helps plants make better use of light and air.

THE ROOT MAKER / FLOWER INDUCER

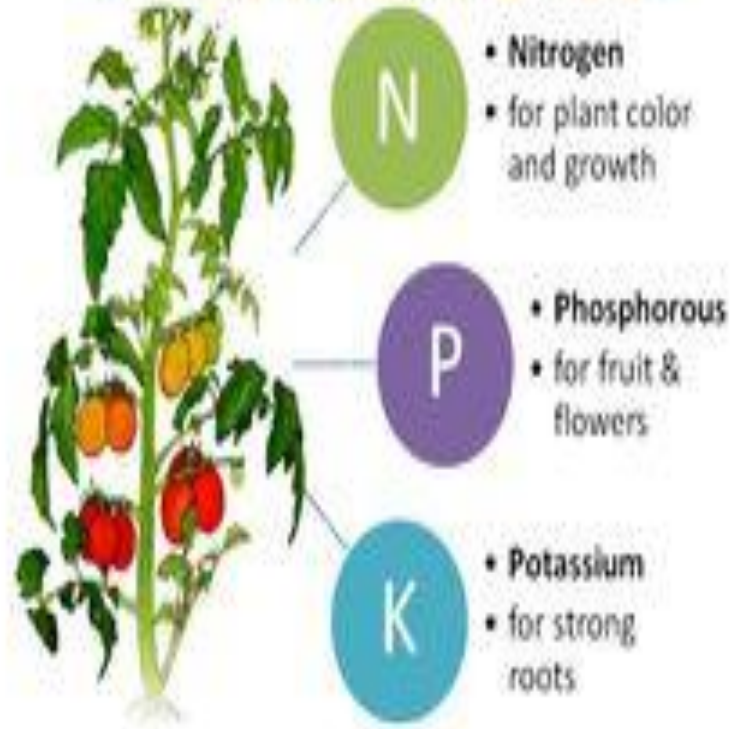
PHOSPHORUS

P

- Encourages root growth and blooming.
- Essential part of the process of photosynthesis.
- Involved in the formation of all oils, sugars and starches.
- Helps with the transformation of solar energy into chemical energy.

Nitrogen is for green leaf

Understanding Fertilizer Numbers



Leaf color from light green to dark green



Iron: Young leaves are yellow and white with green veins. Existing leaves remain green.

Calcium: New leaves mishapen or stunted. Existing leaves remain green.

NEW
OLD

Nitrogen: Upper leaves are light green where lower leaves are yellow. Bottom or older leaves are yellow and shrivelled.

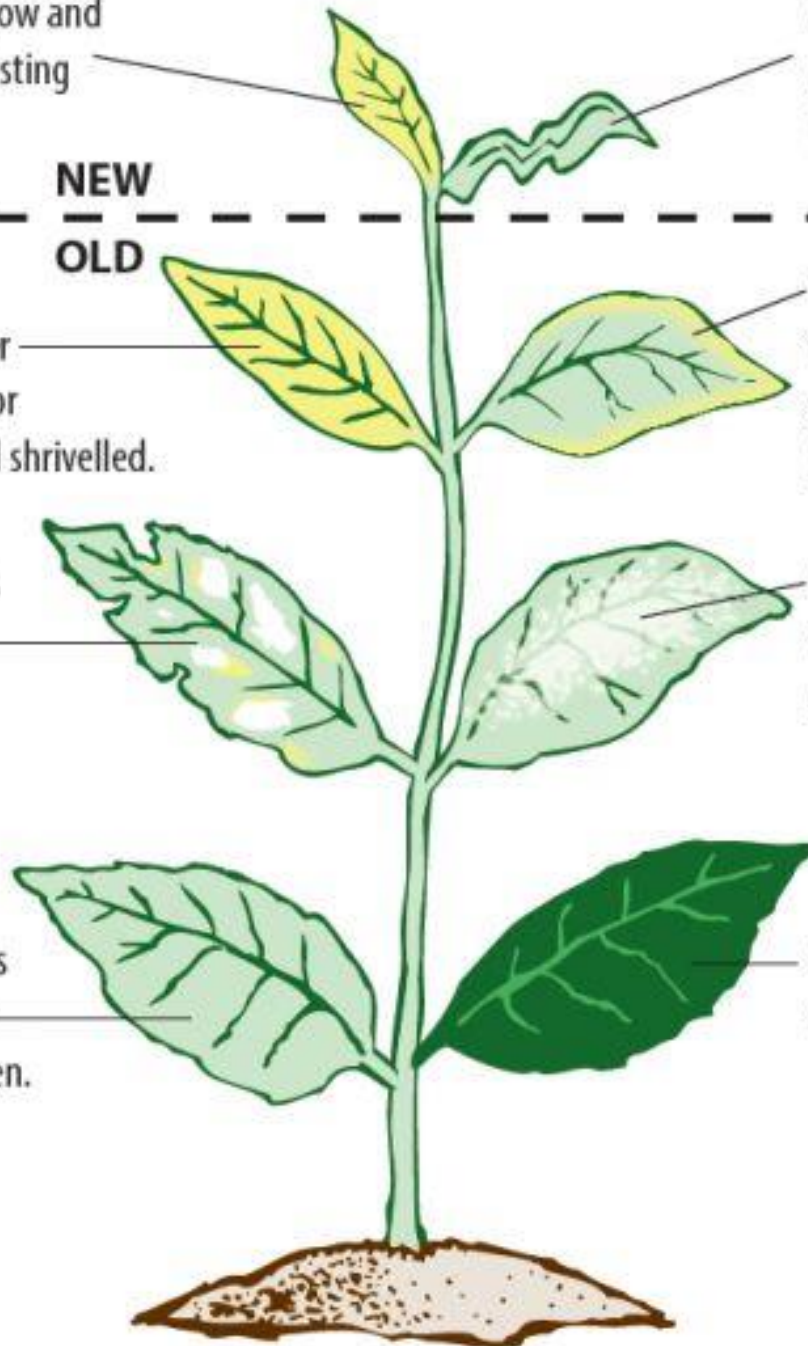
Potassium: Yellowing at the tips and edges, usually in younger leaves. Dead or yellow patches develop on leaves.

Manganese: Yellow spots and/or elongated holes between veins.

Carbon Dioxide: White deposit on leaves. Stunted growth, and plants die back.

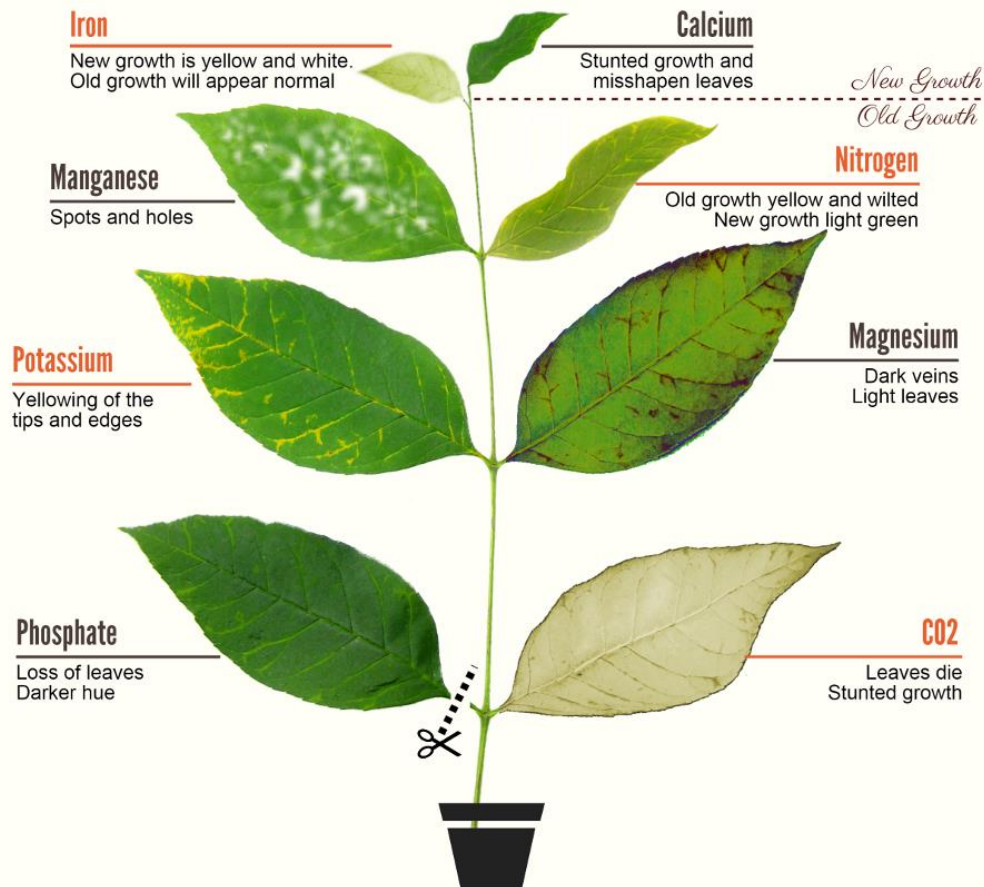
Magnesium: Lower leaves turn yellow from outside going in. Veins remain green.

Phosphate: Leaves are darker than normal and loss of leaves.



5 MIN GUIDE: FRESHWATER NUTRIENT DEFICIENCIES

BY: **AQUATHUSIAST**



FOR MORE INFO, VISIT:
aquathusiast.com/nutrientdeficiency

A PROJECT BY:



Sources:

aquathusiast.com
[flickr.com/photos/evelynfitzgerald/](https://www.flickr.com/photos/evelynfitzgerald/)



水和肥可以通过叶子的气孔吸收

Water and fertilizer could enter the leaf via the Stomata

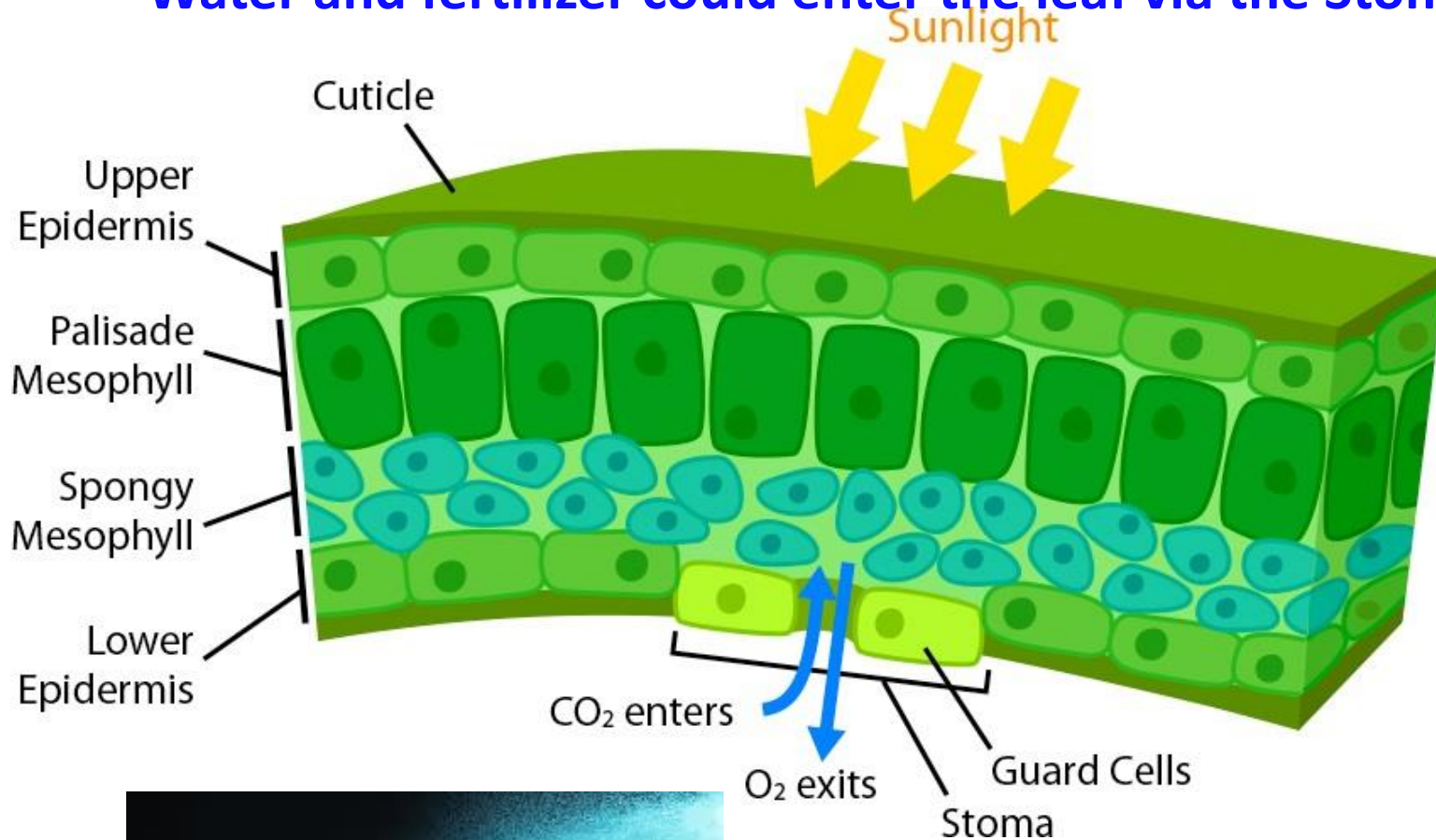




Fig 16.4 Foliar fertilizers can be effective for quickly correcting nutrient deficiency symptoms.

满29
包邮

喷雾营养液



叶面肥

林夕园艺

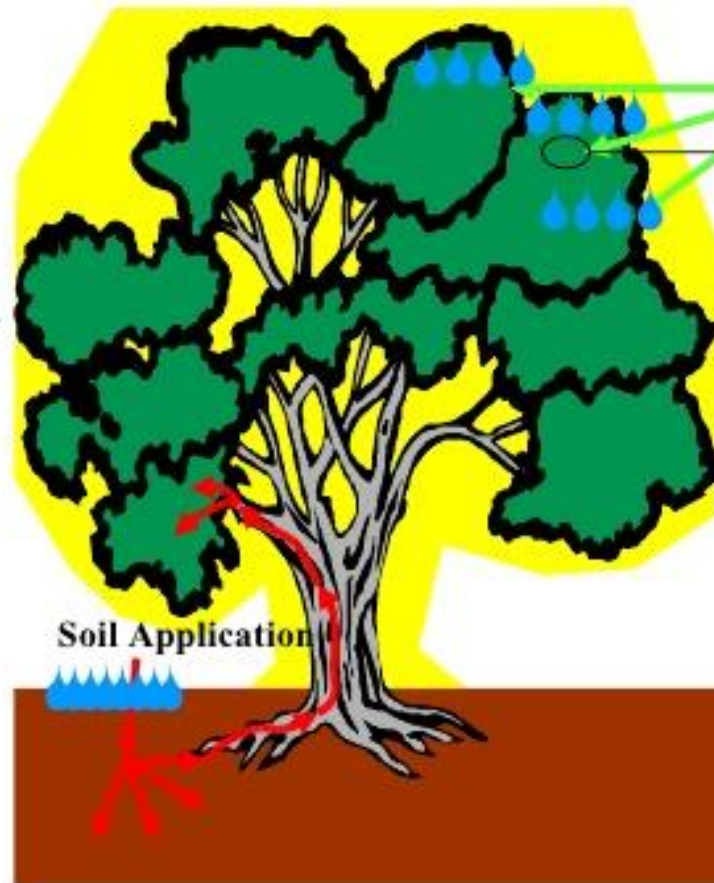
温室番茄叶面施肥



Advantage of Foliar Fertilization over Soil Fertilization

Soil Application

- Ties up
- Slow acting
- Less efficient
- Leaches



Foliar Application

Foliar Application

- Faster uptake (*within hours*)
- No tie up by soil
- More efficient (*3-100 times*)
- No leaching
- Activate plant metabolism stimulating photosynthesis, uptake of water and nutrients

Foliar applications are faster acting and more efficient!

Chicken Manure

A low nitrogen 1-1-1 or 1-2-1 ratio is better.

-Ideally, the nitrogen component should be half water insoluble, or slow release, and half water soluble. Water-insoluble nitrogen breaks down slowly and feeds the tree over a period of months. Compost or horse and chicken manure are great slow release fertilizers.

1 CU. FT. BAGS—ABOUT 40 LB

Table 3.1. Broiler and turkey manure nutrient content as removed from the production house (lb/ton). Nutrient data complied from Barker, (1990), NRAES-132 (1999), and data compiled from South Carolina farms.

	CHICKEN				TURKEY			
	Broiler Litter	Broiler Cake ¹	Roaster Litter	Breeder Litter	Grower Litter	Grower Cake ¹	Poult Litter	Breeder Litter
Moisture (%)	21.5	40.0	22.5	33.5	26.5	45.0	20.0	22.0
TS (%)	78.5	60.0	77.5	66.5	73.5	55.0	80.0	78.0
Density (lb/cu. ft.) ²	27	34 ³	27	35	30	35 ³	26	27
Nutrient Content (lb/ton)								
NH ₄ -N	11	12	14	8	12	20	10	8
Organic-N	60	34	57	26	42	25	30	27
Nitrate-N	0.7	NR ⁴	NR	NR	0.3	NR	NR	NR
Total-N	72	46	71	34	54	45	40	35
PAN								
Surface Spread	42	26	41	20	31	25	23	20
Incorporated	45	30	45	22	35	31	26	23
P ₂ O ₅	69	53	72	56	64	47	43	47
K ₂ O	46	36	46	33	39	30	27	18
Ca	44	34	42	89	37	26	26	72
Mg	8.1	7.0	8.7	7.5	6.9	5.4	5.1	4.6
S	12.1	9.2	14	8.2	8.7	6.3	6.1	7.4
Zn	0.64	0.60	0.68	0.57	0.61	0.47	0.46	0.50
Cu	0.53	0.41	0.50	0.22	0.52	0.48	0.39	0.40
Mn	0.71	0.69	0.75	0.63	0.70	0.56	0.53	0.43
Na	10	10	13	8.5	7.4	5.5	4.7	4.3
As	0.06	NR	NR	NR	0.005	NR	NR	NR

¹ Surface manure cake removed between flocks and prior to adding additional bedding (NRAES, 1999).

² Litter Density (lb/cu. ft.) = 77.29 - 0.643 TS (%), $r^2 = 0.9751$ (does not include caked litter).

³ Density value from NRAES (1999)

⁴ NR = Not Reported

About 40
Pound



COMPOSTED CHICKEN MANURE

BACK TO NATURE COMPOSTED CHICKEN MANURE is 100% manure, fully composted with no filler material added. This compost can be used in various applications such as flower beds, vegetable gardens, lawns, trees and shrubs. **BACK TO NATURE COMPOSTED CHICKEN MANURE** adds organic matter and humus to regenerate low organic soils.

DIRECTIONS FOR USE:

FLOWER BEDS AND VEGETABLE GARDENS – Spread a 1" to 3" layer over the area to be planted and till to a depth of 3" to 8" or lightly rake into the top 2" of soil. Water thoroughly. If your beds are already planted, spread ½" to 1" over the soil around your plants. Water thoroughly. Then resume regular watering schedule.

LAWNS – **EXISTING:** Spread ¼" to ½" over existing lawns and water thoroughly. **NEW:** Spread a 1" layer over entire area to be planted. Till to a depth of 3" to 5" with existing soil, mixing thoroughly, or lightly rake into the top 2" of soil. Plant seeds or lay sod and water adequately.

TREES AND SHRUBS – Dig planting hole at least twice the size of the root ball to be planted. Place the plant in the hole so that the top of the root ball is at least 2" to 3" above surrounding grade level. If you wish to add **COMPOSTED CHICKEN MANURE** to the soil you will be returning to the hole, mix 5 parts soil to 1 part **COMPOSTED CHICKEN MANURE** and backfill to a level even with the surrounding grade level. Be certain that the root flare at the base of the trunk is exposed when planting. If it is not exposed in the planting ball, remove enough soil to expose it prior to planting. Do not allow compost or mulch to cover the root crown of newly planted or existing trees. Whether you amend the backfill soil or not, apply a 1" layer of **COMPOSTED CHICKEN MANURE** on top of the soil from the trunk to the drip line of the plant and water thoroughly. A layer of decorative mulch may be placed on top of the **COMPOSTED CHICKEN MANURE** if desired.

INGREDIENTS : 100% Composted Chicken Manure

BACK TO NATURE COMPOSTED CHICKEN MANURE performs best when mixed with the soil. We do not recommend using this product straight or in soil-less growing mixes. This product contains no chemicals, insects, weeds, or harmful pathogens. Tannins in the compost may stain concrete or wood.



US COMPOSTING
COUNCIL
Seal of Testing
Assurance

Manufactured by:
BACK TO NATURE, INC.
P.O. Box 190
Slaton, Texas 79364
www.backtonaturecompost.com



PLEASE RECYCLE

What to get from Chicken manure

N,P,K

Chicken	Dairy Cow	Horse	Sheep	Rabbit
1.1, 0.8, 0.5	0.25, 0.15, 0.25	0.7, 0.3, 0.6	0.7, 0.3, 0.9	2.4, 1.4, 0.6

It is actually far better because it contains large amounts of organic matter, so it feeds and builds the soil while it nourishes the plants.

Sources: Rodale's All-New Encyclopedia of Organic Gardening, An Illustrated Guide to Organic Gardening, by Sunset Publishing, and the Rodale Guide to Composting.

Calculating actual NPK from fertilizer bag on sale



50 Lb

N=18%

P=24%

K=6%

Actual N = 0.18 x 50 Lb bag =9 Lb

What to get from Chicken manure

N,P,K

Chicken	Dairy Cow	Horse	Sheep	Rabbit
1.1, 0.8, 0.5	0.25, 0.15, 0.25	0.7, 0.3, 0.6	0.7, 0.3, 0.9	2.4, 1.4, 0.6

Chicken manure has 1.1% Nitrogen:
therefore 40 Lb chicken manure is about 0.44 Lb nitrogen

Guavas are fast growers and heavy feeders, and benefit from regular applications of fertilizer. Mature trees may require as much as 1/2 pound actual nitrogen per year. Apply fertilizer monthly if you could

What to get from Chicken manure

N,P,K

Chicken	Dairy Cow	Horse	Sheep	Rabbit
1.1, 0.8, 0.5	0.25, 0.15, 0.25	0.7, 0.3, 0.6	0.7, 0.3, 0.9	2.4, 1.4, 0.6

- Young tree, use $\frac{1}{4}$ bag in Spring and another $\frac{1}{4}$ in June
- 2year old tree:
 - Apply half bag in the Spring when bud begin to sprout
 - Apply the second half in June

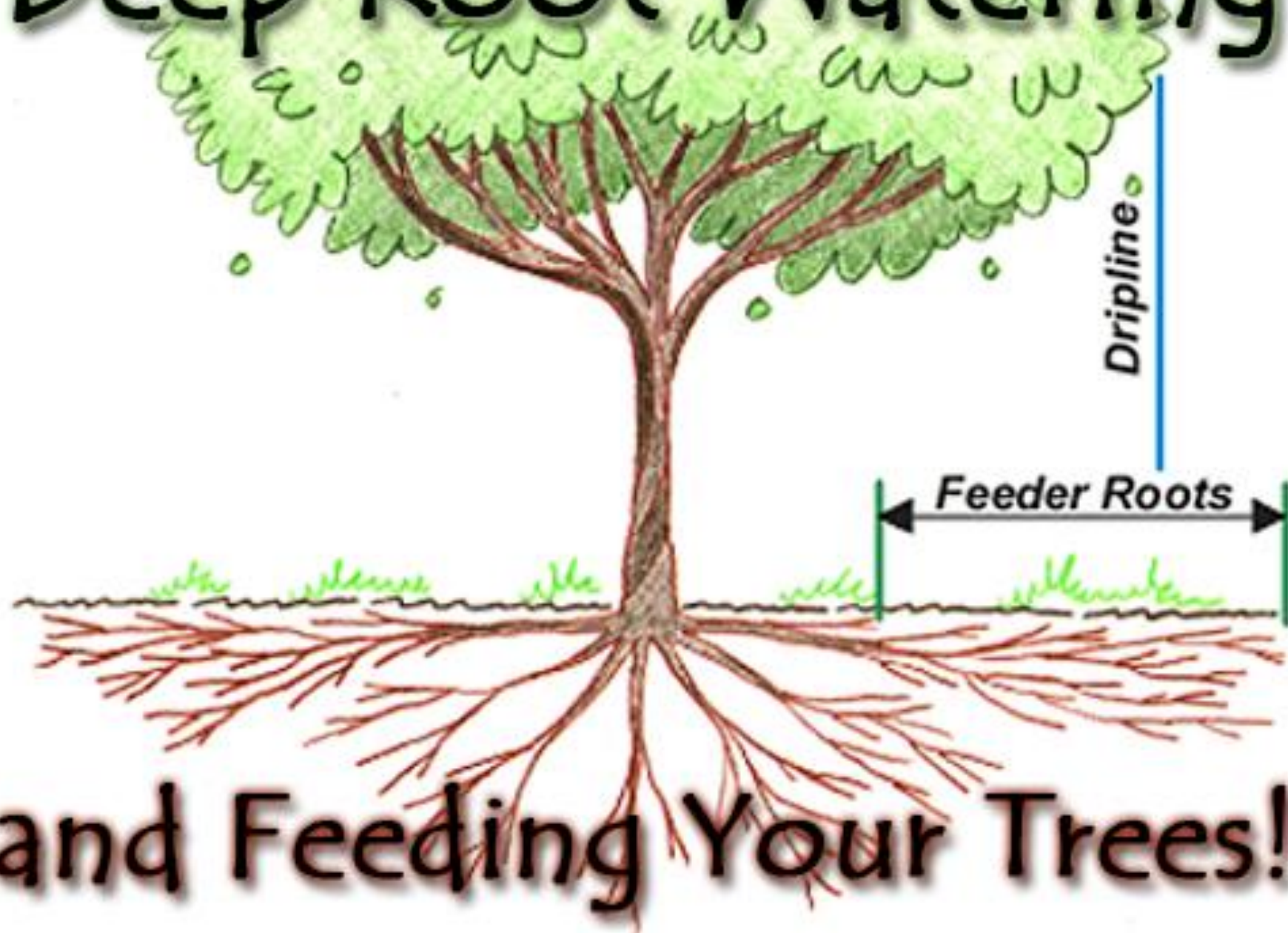


7. 浇水

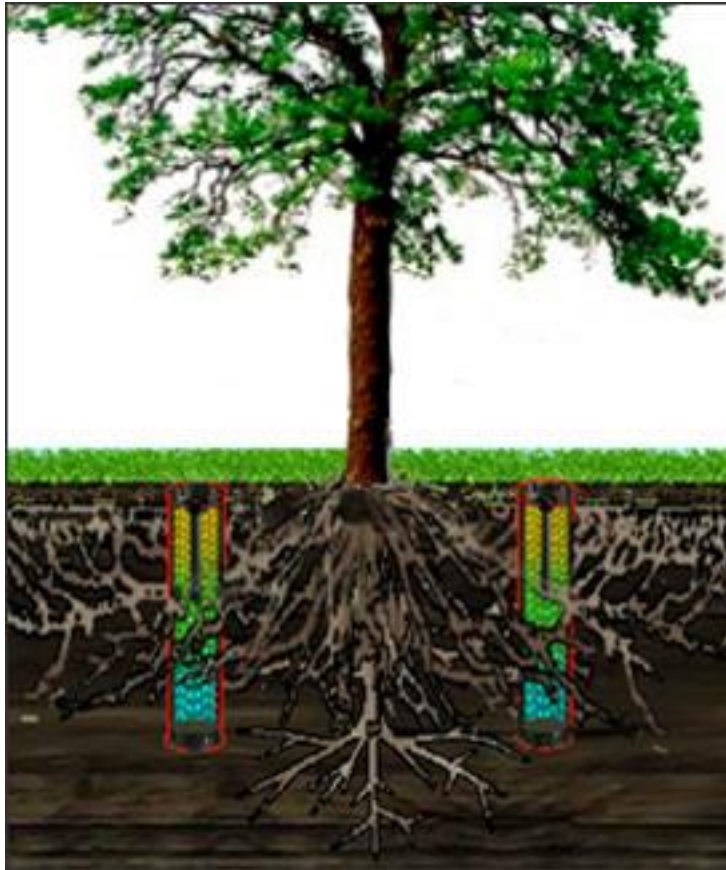
1. 深浇水效果更好
2. 浇水之前可以有几英寸的干土，缺水会导致开花延迟和果实脱落.
3. 芭乐树耐涝和耐热

Guavas can take considerable neglect, withstanding temporary waterlogging and very high temperatures

Deep Root Watering

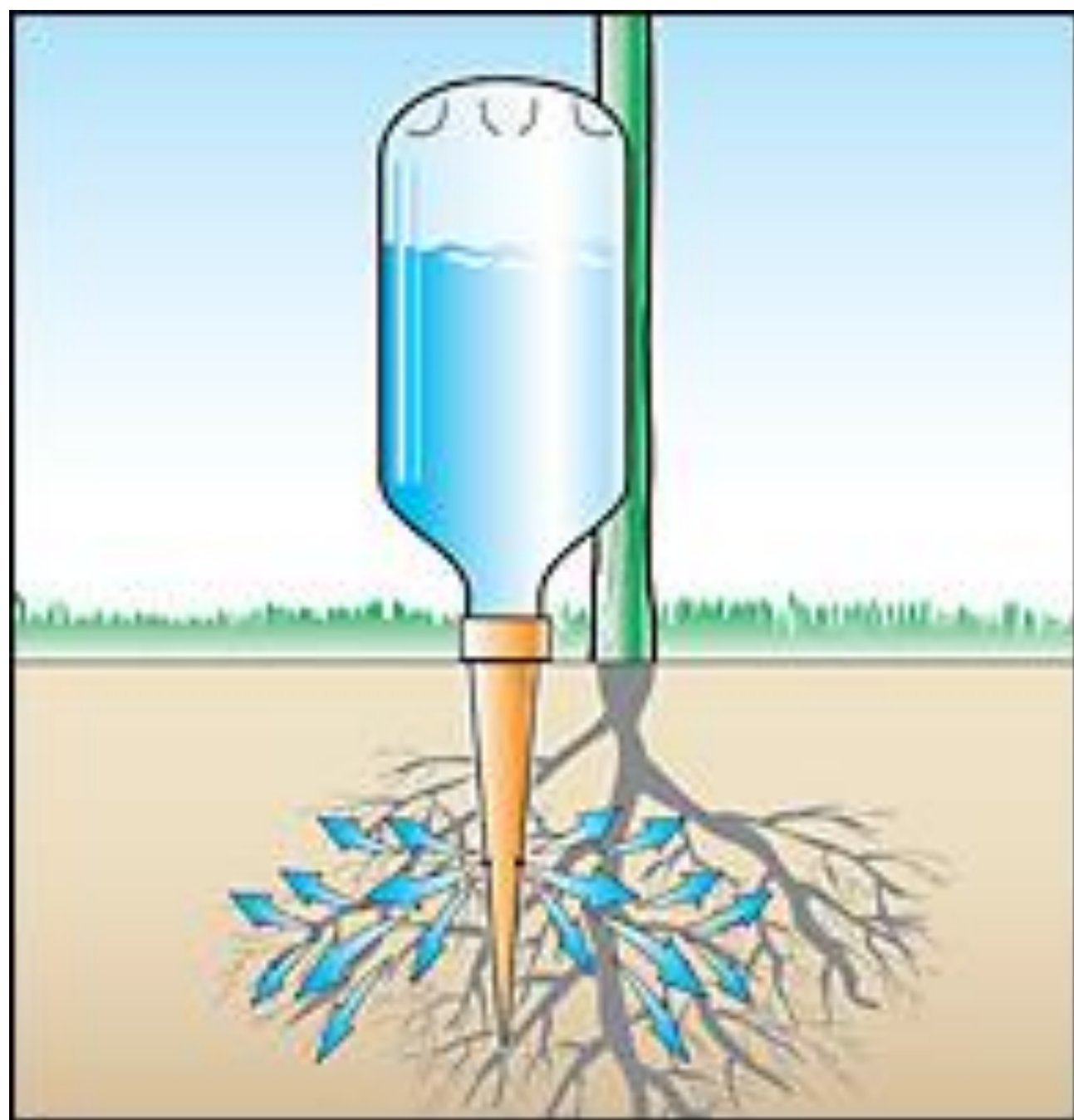


and Feeding Your Trees!

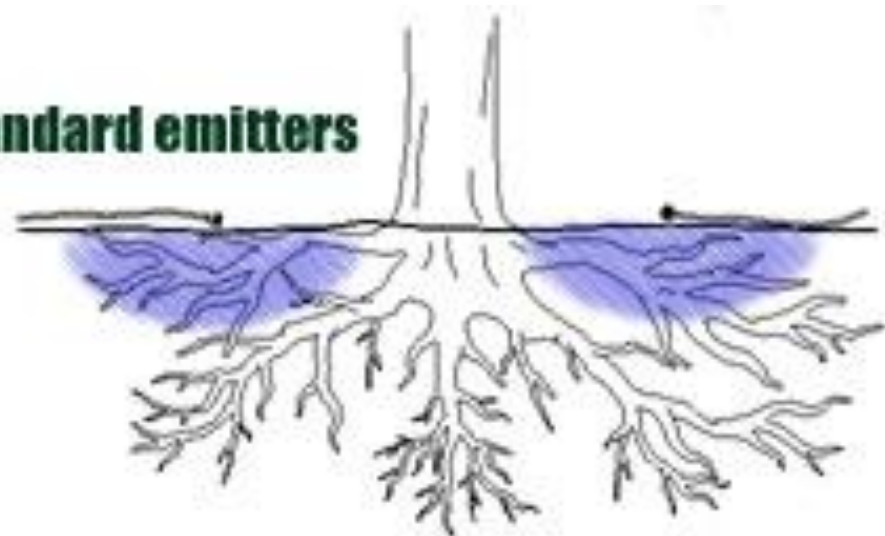




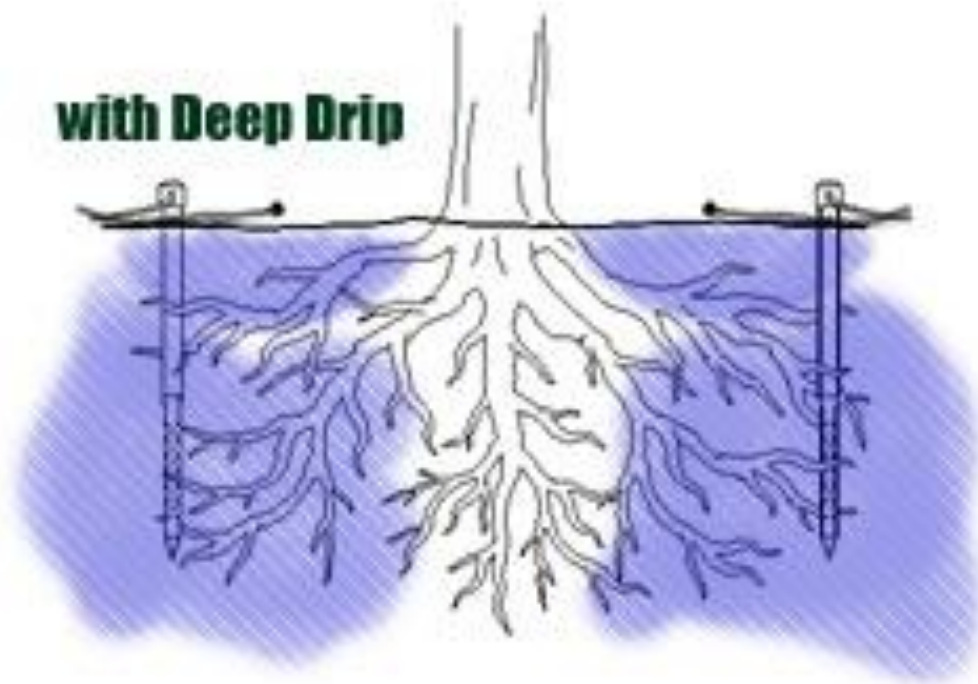
RECLAIMGROWSUSTAIN.COM



standard emitters



with Deep Drip



specialty engineered ABS cap

ribbed dome construction built for
sledge hammer installation

UV protected

guards against cracking or weathering

slotted cap for drip line

easily connects to your automatic dripline

extraction hole

for easy removal with only a screwdriver



internal filter

keeps rock and dirt out, ensuring proper irrigation

durable shaft

1" interior diameter, allowing water to flow easily

tapered head

allows for better ground penetration

perforated shaft

optimal water/fertilizer saturation

deeper fertilization

add directly into the spike

reinforced ABS tip

internal ribbing for added strength



USE WITH A HOSE OR DRIP LINE

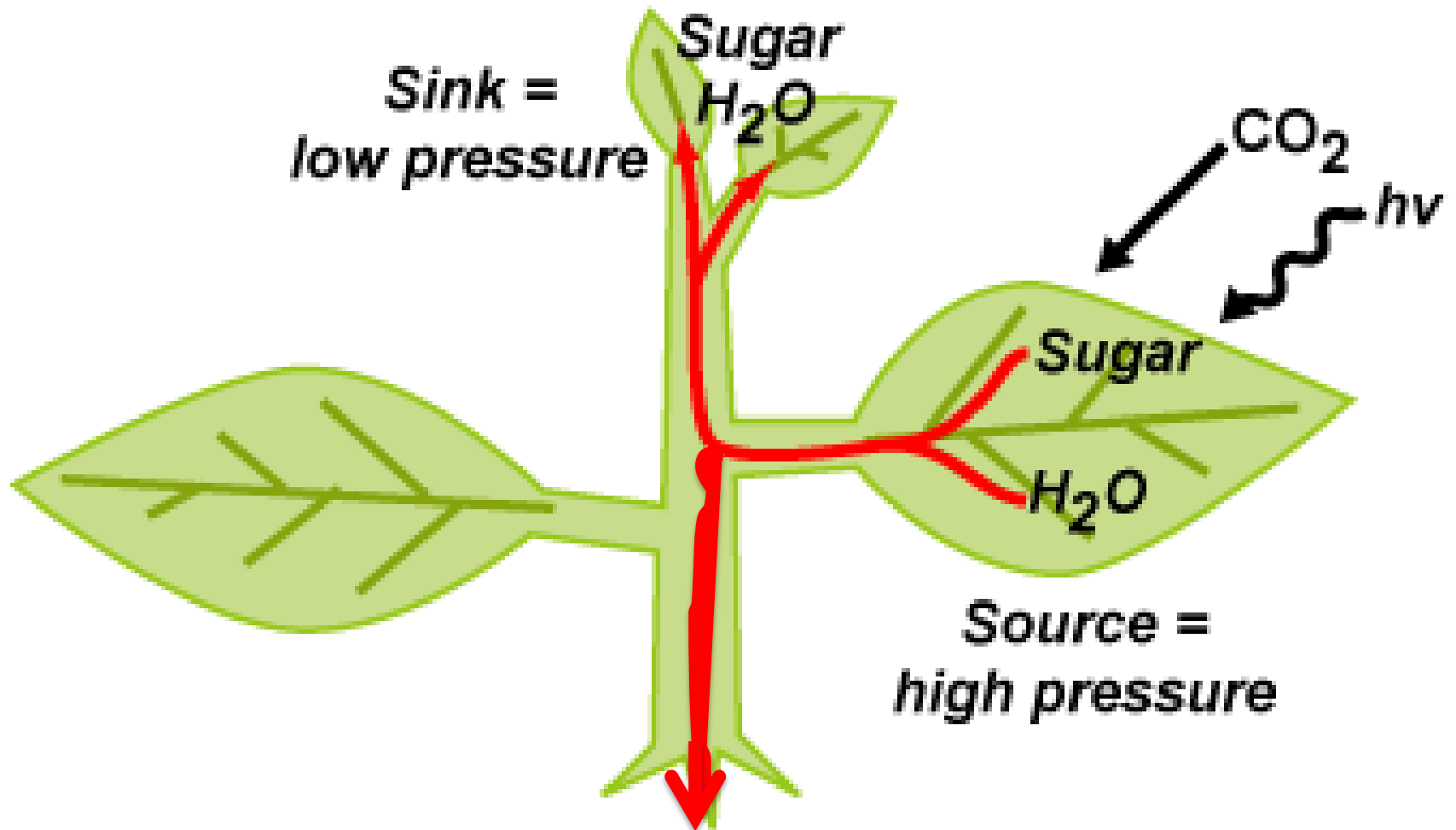


8. 如何收获大的芭乐





糖被向上和向下运



**使用30~40叶
为支持一个水果**

Use 30 to 40 leaves to
support one fruit



Mature green fruit can be stored for two to five weeks at temperature between 46° and 50° F and relative humidity of 85 to 95 percent



枝子太小 Branch too small



适当修剪小芽保持养分

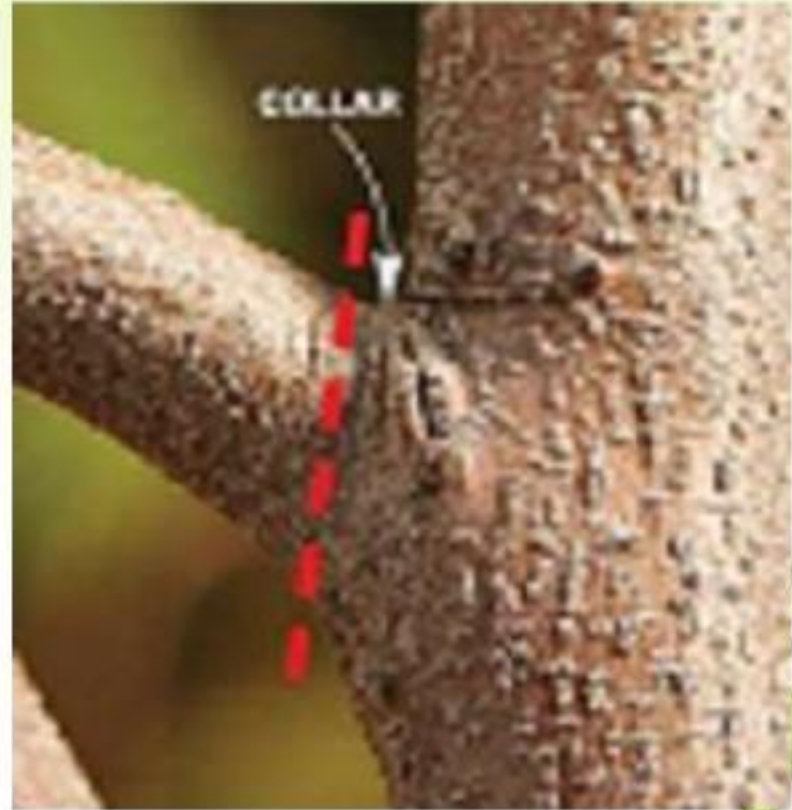
Pruning & maintenance of site

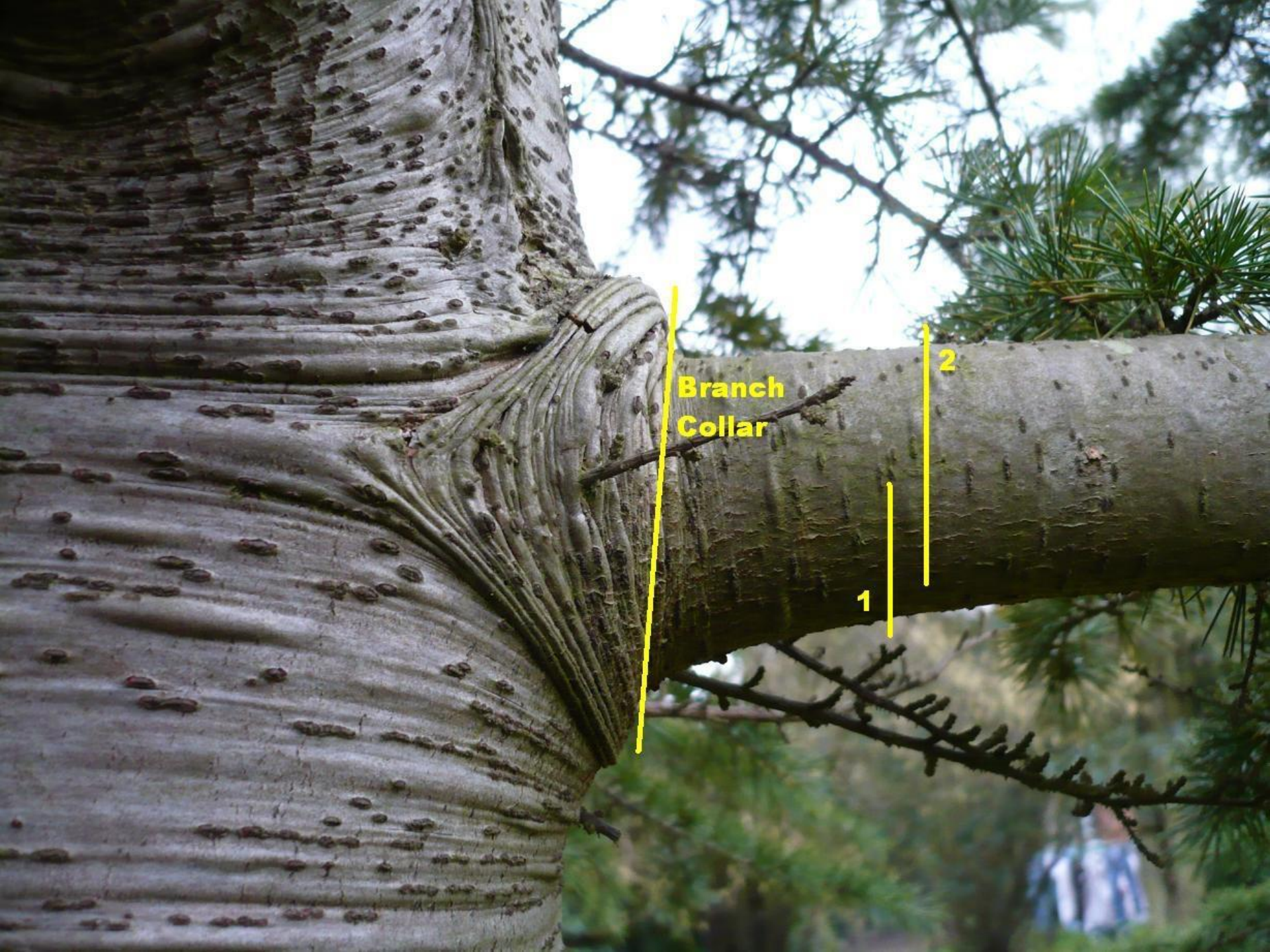
Shaping the tree and removing water shoots and suckers are usually all that is necessary. Guavas can take heavy pruning. Since the fruit is borne on new growth, pruning does not interfere with next years crop.

Pruning

The Collar Method

Collar method is a type of natural target pruning in which the branch collar is left on the main tree stem instead of removing the whole branch. Branch collar is the base area of a branch where the tissues of the branch and the main tree join together forming a wrinkled surface. Pruning the branch from this collar is a widely practiced method.





**Branch
Collar**

1

2



6 种常见的修剪树/玫瑰的原则

Six general ways to prune a small tree/Rose

1) 去掉死枝

2) 去掉交叉的枝子

3) 去掉小枝

(prune a branch above the collar for tree)

4) 向下面长得枝子 Prune to an outward facing bud step

5) 底部的枝子 Strip all remaining leaves and clean up base

6) 适当施肥 Feed with appropriate fertilizer



Prune trees as needed to open the canopy and remove dead branches or suckers.

Use a pruning saw to remove entire
Branches that grow inward, across other
branches or vertically should be removed.



Overwintering technique: Protection from cold temperature

SUN AND HEAT

1. The tree will recover from a brief exposure to 29° F.
2. Young trees are particularly sensitive to cold spells.
3. Older trees, killed to the ground, have sent up new shoots which fruited 2 years later.

霜冻保护

CARE AND FROST PROTECTION

- 1) Overhead protection and planting on the warm side of a building or structure will often provide suitable frost protection for guavas in cooler areas.
Northwest wind 西北风 (Fall and Winter)
- 1) A frame over the plant covered with fabric will provide additional protection during freezes, and electric lights can be included for added warmth.
- 2) Potted plants can be moved to a more protected site if necessary.

28 华氏度会损害树和根Temperatures below 28 degrees Fahrenheit can injure the tree, although it may grow back from the roots even if the tree is killed to the ground.

Food
reserve
is in
the
root
and
stem



粮食
储备
在根
和茎/
干



A woman with blonde hair, wearing a white zip-up hoodie and blue jeans, stands next to a large, round object completely covered in a dark green tarp. The object is sitting on a patterned base. In the background, there is a swimming pool and some greenery.

**As seen on HGTV's
*I Want That!***

**click to view
one minute segment**

**pictured: 10ft diameter
PLANKET**

A photograph showing a row of trees and shrubs wrapped in brown burlap for winter protection. The burlap is wrapped in a spiral pattern around the trunks. The trees are located along a paved path or driveway. In the background, there are bare trees and a grassy area. A black lamp post is visible on the right side of the path. A white text box with a black border is overlaid on the bottom left of the image.

Protect Trees & Shrubs for Winter



叶子的冷冻伤害症状

Winter injury to leaves

1. Winter induces mineral deficiency-like symptoms.
2. There will be secondary infection from injury to leaves

剪掉冻叶 适量施肥

Remedy: removed diseased leaves and apply fertilizer



10. 繁殖方法

Propagation



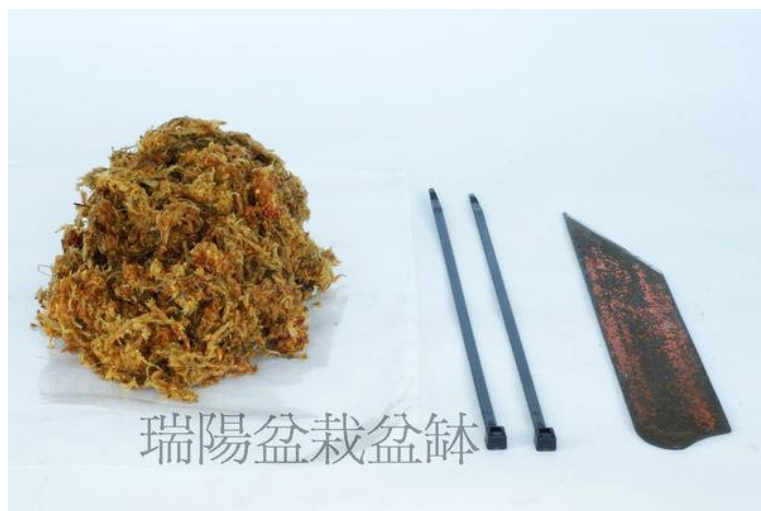
圈枝脱皮



博雅旅游网 bytravel.cn
包“泥蛇”



包薄膜



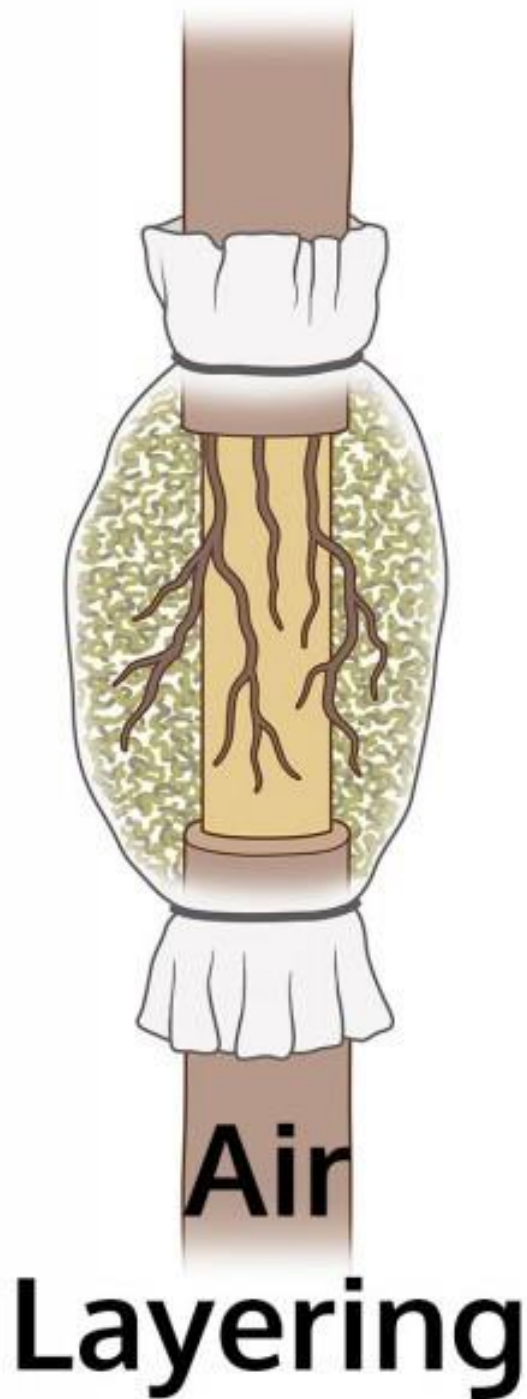
瑞陽盆栽盆鉢





100%成功率
success





高空压枝

Method for acclimation of new rooted branch

- 1) 浸泡根一个小时以上
Soak root in water for >1 hour
- 2) 用塑料袋包裹一周 Cover completely with plastic bag for one week
- 3) 塑料袋扎孔后再包一周 Make holes on plastic bag and continue for 1 more week
- 4) 把塑料袋取走放在阴凉处直到新芽长出来 Remove plastic bag and put in shade area until shoot growth

First week complete, second week punch holes

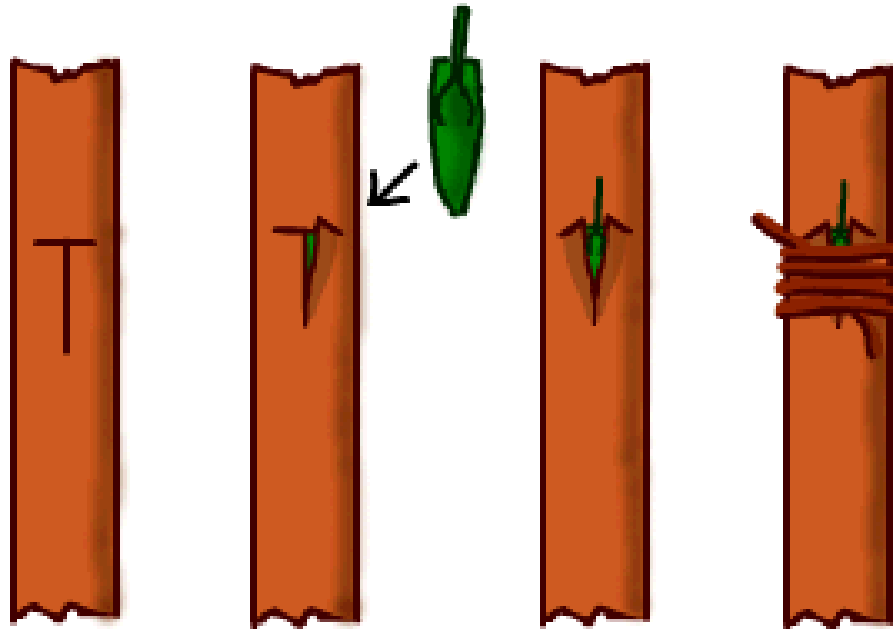




Guava T-grafting

Insert bud shield under
flaps of "T" cut

Use
Dormant
bud !!

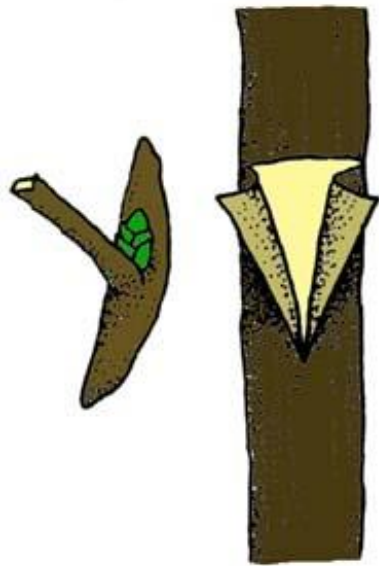


But use
graft/chip
Not Bud

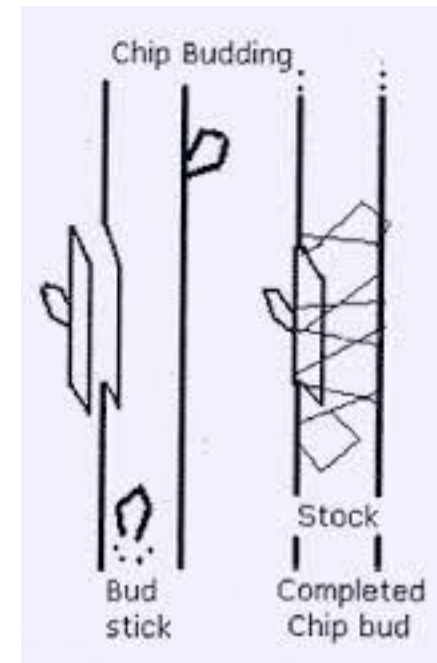
Secure bud graft with
budding bands or other tape

芭乐：T型-嫁接

Guava: T-grafting



Treatment	Success %
T-budding	22.58
T-grafting	59.3
Chip grafting	7.54



Malik mohsin Abbas et al., Grafting techniques in guava (psidium guajava)
J. Agric. Res, 2013, 5(4)

<https://www.youtube.com/watch?v=yyCNVT5dHCg>

芭乐的插枝

芭乐的插枝繁殖 Propagating From Cuttings

- 1, 把4-6 英寸长的软枝在生根剂里沾一下

Dip 4- to 6-inch-long softwood cuttings from a guava plant into rooting hormone.

- 2 把插枝放在保湿性好的育苗土沙，用循环的塑料器皿诸如酸奶或者奶酪

Place the cuttings in moist seed-starting medium or sand. Use recycled plastic containers, such as yogurt or cottage cheese containers.

- 3, 用四只高过枝子几英寸的竹竿插在容器的四周，喷水，然后用塑料包裹

Place four bamboo sticks around the perimeter of each container, extending several inches above the tallest leaves of the cuttings. Mist with water, and then cover the container with plastic wrap.

- 4, 把插枝放在加热的垫子上，明亮的地方。维持温暖湿润的条件2-3直到知道生根

Put the cuttings on top of a heating pad in a brightly lit location. Maintain a warm temperature and keep the soil moist by misting until the cuttings root in two to three weeks.

- 5 把生根的插枝移栽到大的花盆，放置在温暖的（65 华氏度以上）光照充足的日光房

Transplant the rooted cuttings into larger containers. Place them in a warm sunroom or in a sheltered, sunny location in the garden for the summer. Move them to a warm room indoors before the outside temperature drops below 65 degrees Fahrenheit.

Stem Root cutting





Guava: Stem cutting

1. Make cuttings about 6 inches long from wood that is 1/4 to 1/2 inch in diameter.
2. Remove all but the top two leaves from each cutting. Cut the top two leaves in half to reduce moisture loss while the cutting is forming roots.

Rooting

Step 1

Fill gallon-size pots with a sterile rooting medium such as perlite, and wet it down thoroughly. Plan on one pot for every four cuttings.

Step 2

Dip the bottom half of the cuttings into rooting hormone, and stick them halfway down into the rooting medium.

Step 3

Cut a 2-liter bottle in half, and place it over the cuttings inside the pot with the lid facing up. Push the bottle down an inch or so into the rooting medium to trap air and moisture around the cuttings.

Step 4

Place the potted cuttings in bright, indirect light in a location where they will stay as warm as possible day and night -- 75 to 85 degrees Fahrenheit is ideal for stimulating root formation.

Step 5

Open the lid of the plastic bottle, and spritz the cuttings with water. Repeat every two or three days until roots have formed. When the cuttings begin to grow new leaves from the top, sufficient root formation has occurred and they can be transplanted to individual pots.

如何移栽芭乐树

How to transfer bigger Guava tree



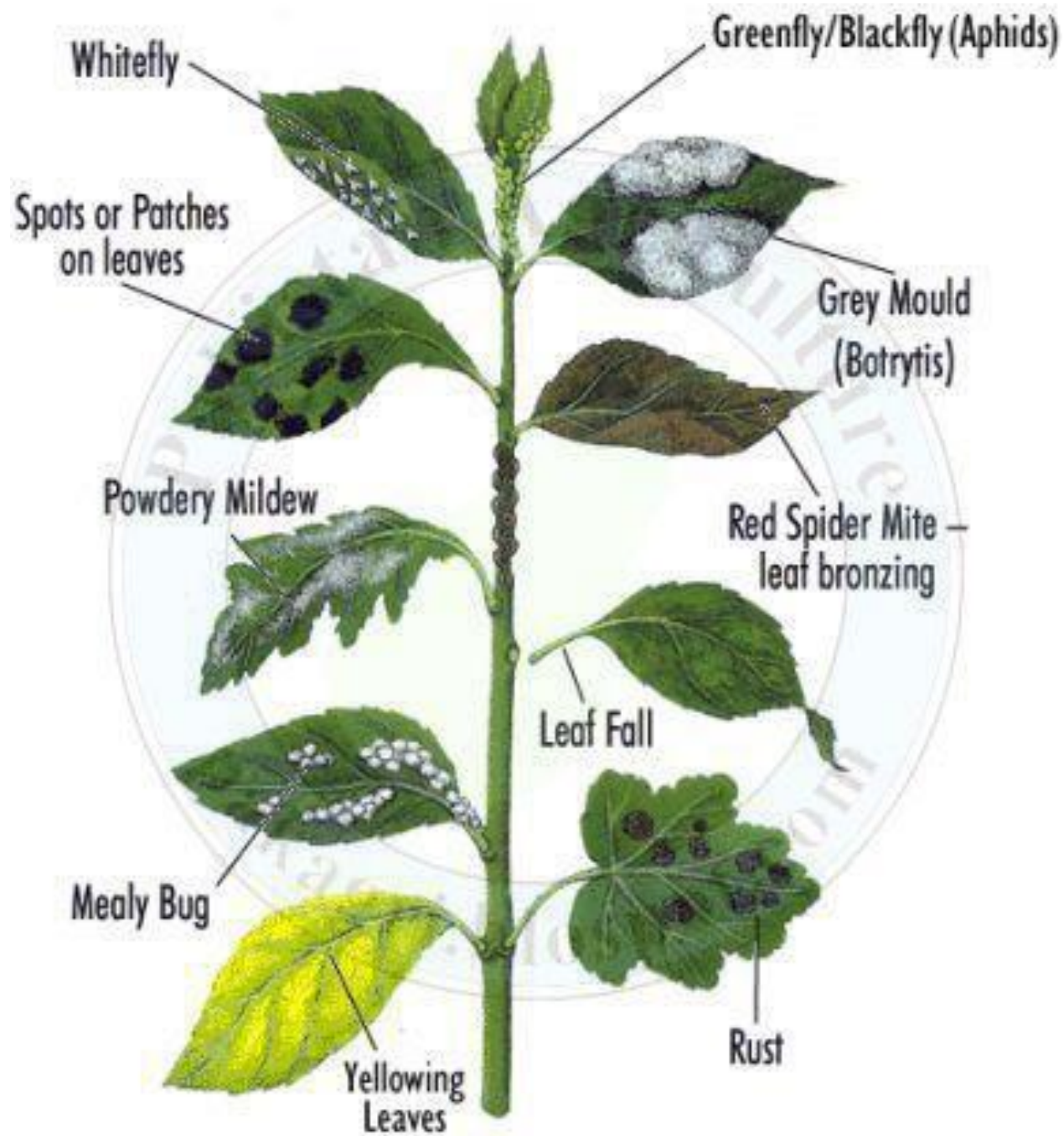
Cut off line

1. Thoroughly water plant over night
2. Dig as much root and soil as you can
3. Prune off all major branches
4. After planting, cover with plastic bag to conserve water loss
And also seal off any wound surfaces

11. 虫害处理

Pest management

任何能活动的生物就容易杀死
Anything that moves is easier to kill



Plant Diseases and management

Insects



**Cure
management**



- 1) Removed heavily infected leaves
- 2) Wash away pests with water
- 3) Spray reagents to kill them
- 4) Crop rotation, resistant variety

**Fungus
Virus
bacteria**



**Prevention
Control spread**



- 1) Remove infected parts or soil
- 2) Spray copper-fungicide to Kill spores to prevent spread
- 3) Grow resistant variety

**Water
problem**



Prevention



Use rain water or tap water settled for 2 day to remove chlorine

**Mineral
deficiency**



Prevention



Add single mineral, adjust soil pH
Or Spray to leaf directly, use compost

Sun burn



Prevention



Water plant thoroughly and removed damaged leaves to avoid secondary infection

叶子上的虫害

Insects Problem on leaf

Only whitefly & Mealy bugs are bad problems of Guava

芭乐有关的病虫害

Pest and diseases related to Guava:

虫害 Pests

病害 Diseases

Whitefly

Wilt

Aphids

Red Rust

Mealy bugs

Anthracnose

Fruit fly

Canker

Guava shoot borer

Algal spot

Guava weevil

Dry Rot

Thrips etc

Damping off

粉虱 Whitefly



1 and 1/2 month life cycle

粉虱的周期 WHITEFLY

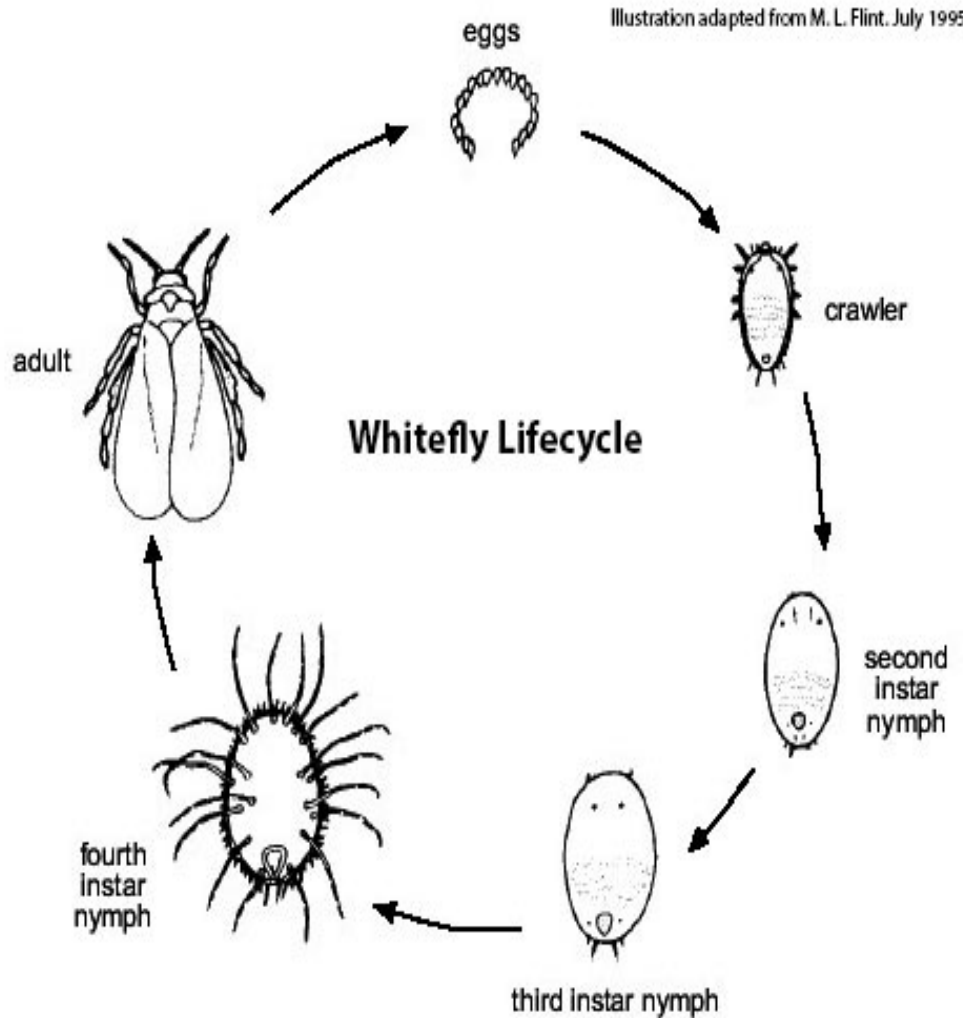
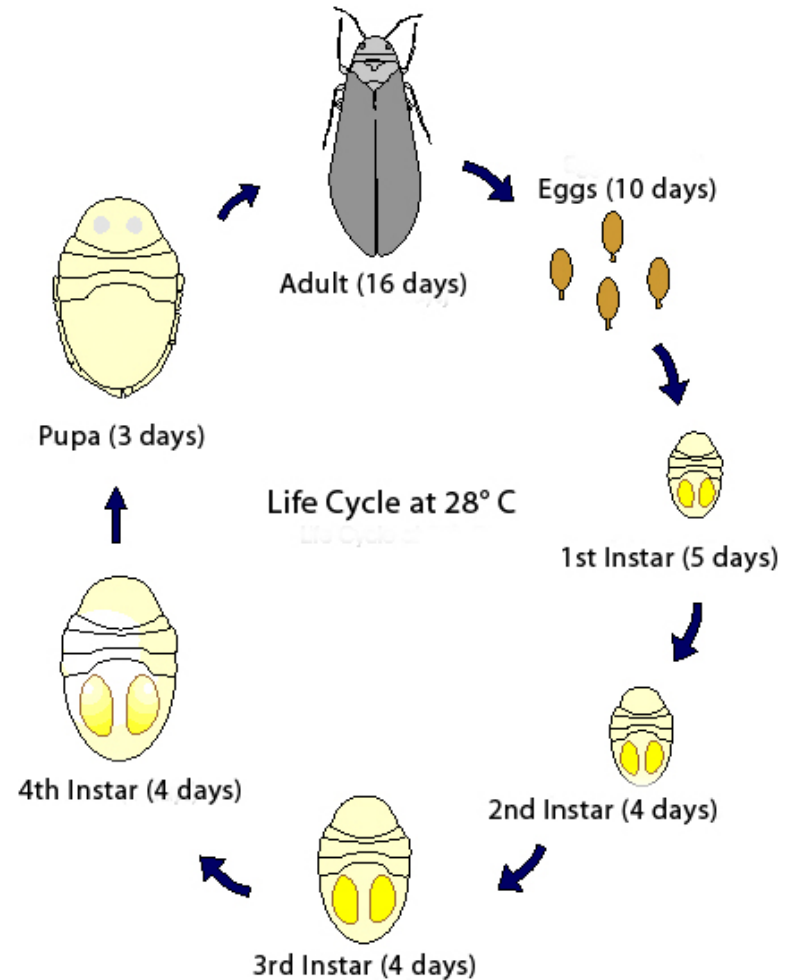


Diagram A
Life Cycle of the Silverleaf Whitefly



螺旋粉虱 **Spiral Whitefly**



粉蚧 **Mealy Bug**



Photo by G. Arakelian

Disease	Chemical	When to apply	How often	Effectiveness	What not to do
whitefly	Insecticidal oil Neem oil	Remove excessive infestation	Wash or blow them away		
	Spinosad	Toxic to honey bee			Kill honey bee
	50% alcohol +50% water and spray	Every five days to disrupt life cycle	Or yellow sticky trap		
	Worm casting	Manure from earth worm give sour juice discourage white fly to go away			Apply to base of plant



Method #1



Method #2



- 1) Opt for a mild liquid dish-washing soap. The more mild your soap is, the less likely it is to have a harmful effect on your plants. Stay away from anti-bacterial, scented, and other specialized soaps.
- 2) Mix a few teaspoons (10 to 15 milliliters) of your selected soap into 1 gallon (4 liters) of water. Combine the soap and water using your hands or a large spoon.
- 3) Pour the solution into a large squirt bottle. You may not be able to fit all of the solution into a bottle, but you should use the largest bottle you can find to make use of as much of the solution as possible.
- 4) Spray the entire plant. Cover the top and undersides of leaves, focusing on the areas that seem the most overcome. This spray works by paralyzing insects, making them unable to eat.

Method #3



- 1) Opt for a mild liquid dish-washing soap. The more mild your soap is, the less likely it is to have a harmful effect on your plants. Stay away from anti-bacterial, scented, and other specialized soaps.
- 2) Mix a few teaspoons (10 to 15 milliliters) of your selected soap into 1 gallon (4 liters) of water. Combine the soap and water using your hands or a large spoon.
- 3) Pour the solution into a large squirt bottle. You may not be able to fit all of the solution into a bottle, but you should use the largest bottle you can find to make use of as much of the solution as possible.
- 4) Spray the entire plant. Cover the top and undersides of leaves, focusing on the areas that seem the most overcome. This spray works by paralyzing insects, making them unable to eat.

果实上的害虫问题

Insects Problem on fruit

使用隔离方法保护果实
Physical barrier to protect fruit

果蝇伤害Fruit Fly Damage



果蝇伤害 Fruit Fly Damage



用包装袋保护果实

Method to protection fruit from insect/disease





Ziploc
Great Tastes

Storage Only











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杀虫剂适用虫害类型

Potency of Organic Pesticides on Pests

Pesticides	Aphids	Mealbugs	Mites	Leafhopper	Scale insects	Thrips	whiteflies	caterpillar	Leaf miner	Slug/sna il
Garden Safe insecticidal soap	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Neem oil	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Horticulture oil For use on trees	Yes	Yes	Yes		Yes					
50% alcohol or 70% alcohol	Yes	Yes					Yes			
BT								Yes		
Spinosad Kill fire ant/fleas						Yes		Yes	Yes	
Pyrethrin				Yes		Yes		Yes		
Ferric phosphate										Yes

Note: To be safe, these pesticides should be used at least one week before harvest

12 病害处理

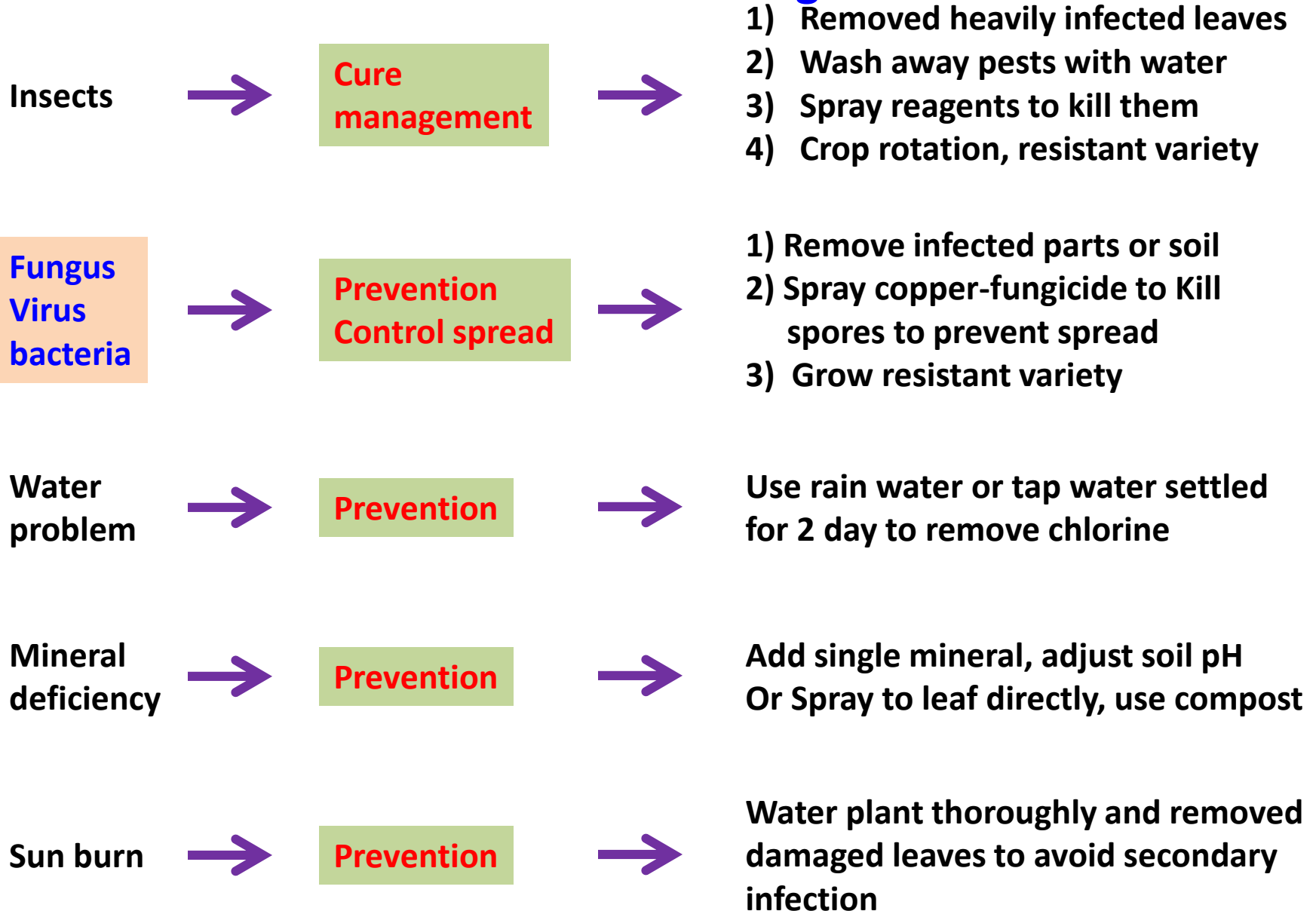
Disease management

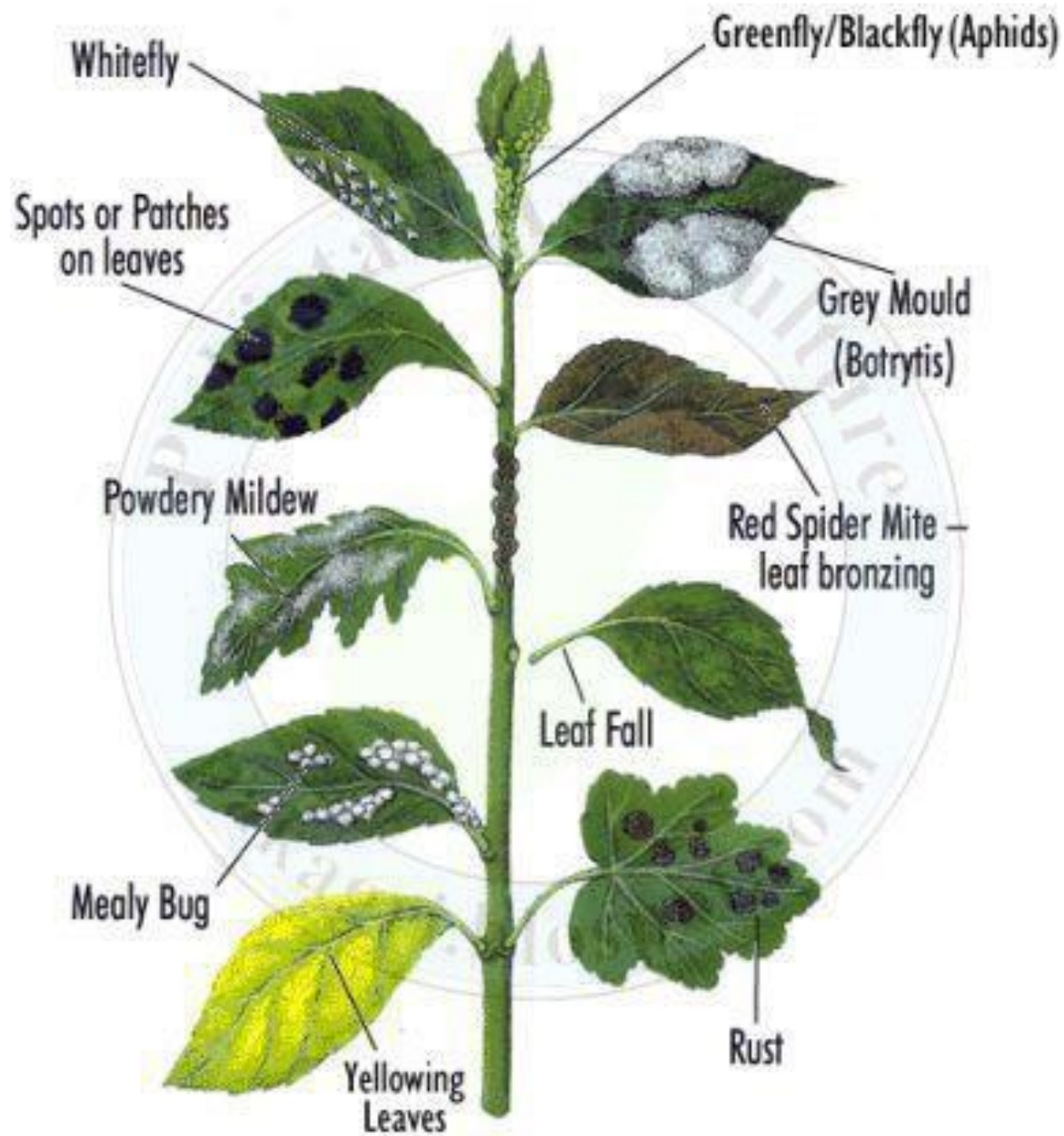
任何不能活动的生物就不容易杀死

Anything that does not move is very hard to kill

植物病的常见处理方法

Plant Diseases and management





处理植物病的方法

Methods to treat diseases

1) 基因工程 e.g. Papaya

2) 预防措施 Prevention:

- a. 喷含铜的杀霉剂—copper fungicide
- b. 包裹起来—Bagging
- c. 修剪枝后消毒处理—Branch pruning/sanitation
- d. 选择抗病的品种—Grow resistant variety
- e. 用漱口水1比3稀释后喷洒

Mouth wash-bacteria and powdery mildew
(one part mouthwash to three parts water)

芭乐锈病 Guava Rust



芭乐霉病 Fungus

Grow resistant variety



Bagging



藻斑病 Algal leaf spot--Caused by Algae(*Cephaleuros virescens*)

Management

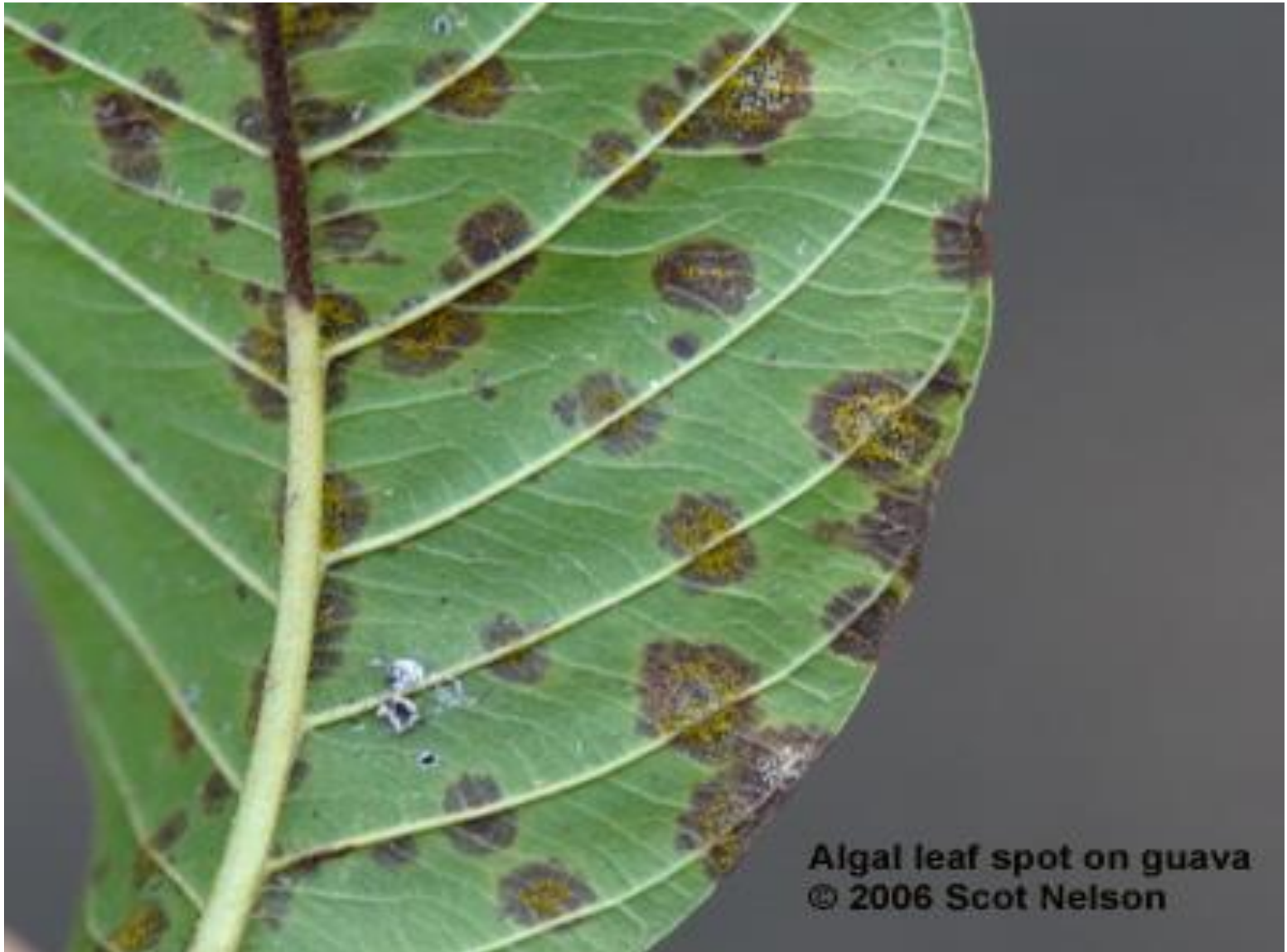
Ensure trees receive adequate fertilization, irrigation and are properly pruned to avoid stress on the plants and promote air circulation through the canopy; periodic applications of a **copper based fungicide** is usually enough to control the disease



藻斑点 Algal spot



藻斑点 Algal spot



Algal leaf spot on guava
© 2006 Scot Nelson

无法处理的病菌

No treatment: Bacterial **disease** of guava. Pathogen name: *Erwinia psidii*

