

dress the containers with a teaspoonful of an organic nitrogen fertilizer, such as blood meal.

To summarize:

Douglas fir bark is of low cost and light weight.

Bark contains appreciable amounts of plant nutrients.

When properly screened, ground bark can be used without sand or other material. usually used to improve drainage.

With proper water and fertilizing practices, bark is an excellent material for producing good quality container nursery stock at substantial savings.

MODERATOR JOE KLUPENGER: Thank you, Floyd, for a very interesting talk on a growing medium using bark dust. Our next speaker on soil mixtures, is one that needs no introduction here this morning either. He has come along from many years back in pioneering a lot of container-grown material in this area, as well as gadgets and gimmicks to increase production, and now studies with different types of soil mixtures. He is Dan Schmidt with Schmidt Brothers Nursery. Dan!

SOIL MIXTURES

DAN SCHMIDT

Schmidt Bros. Nursery

MIX — To unite or blend into one mass.

MIXTURE — Compound formed by mixing.

SOIL MIXTURE — Several ingredients mixed together.

Soil mixtures for containers should have four important qualities:

1. SUPPORT
2. MOISTURE
3. AERATION
4. FERTILITY

1. SUPPORT — Firm enough mix to hold up the plant.

2. MOISTURE — Soil mix should have ability to hold moisture between irrigations . . . it also should have good drainage.

3. AERATION — Soil mix should be porous enough to let the gases in and out of the soil. If the soil mix is too fine, water will fill up these pores and will reduce aeration.

4. FERTILITY — Mineral nutrients: Most green plants are known to require at least twelve chemical elements:

- | | | |
|----------------|--------------|----------------|
| 1. Nitrogen | 5. Magnesium | 9. Manganese |
| 2. Phosphorous | 6. Sulphur | 10. Copper |
| 3. Potassium | 7. Iron | 11. Boron |
| 4. Calcium | 8. Zinc | 12. Molybdenum |

The first three major elements are not enough. Plants also require the last nine minor elements to get satisfactory growth. If you lack anyone, the plants have trouble. Fertile soil contains all of these elements.

SOIL - MIX INGREDIENTS:

Peat moss
Sand
Medium loam soil

It is almost impossible to have just one soil mix for every kind of plant and purpose. Greenhouse plants require one type mix . . . outside containers, another.

GREENHOUSE — Seed growing and potting compost:

40% leaf mold or medium loam
40% peat moss
20% sand, medium
8 lbs. dolomite lime per cubic yard.
5 lbs. organic fertilizer mix with all 12 elements.

This mixture can be used for anything we grow in ornamental shrubs, conifers and broadleaves, except daphnes.

Daphne mixtures would be:

40% leaf mold
40% medium loam and 20% sand
or 70% medium loam, 30% sand
8 lbs. dolomite lime and 5 lbs. organic fertilizer

This mix can be used in the greenhouse and also in containers outside.

OUTSIDE container mix: (per cubic yard of mix)

40% medium loam
40% peat moss
20% medium sand
3 lbs. single superphosphate
1 lb. muriate of potash
5 lbs. calcium carbonate lime
5 lbs. dolomite lime

I consider these mixes to be the best in our experience of container growing. Other mixtures can be used; other growers have had good success with such as:

U.C. SOIL MIXES:

	Sand	Peat moss
A	100%	0
B	75%	25%
C	50%	50%
D	25%	75%
E	0	100%

#B is considered to be the best all-around mix . . . 75% sand and 25% peat moss.

USING SAWDUST or BARKDUST:

B	75%	Sand	25%	Sawdust
C	50%	"	50%	"
D	25%	"	75%	"
E	0	"	100%	"

USING COMPOST:

A	75%	topsoil	25%	leafmold
B	50%	"	25%	" and 25% manure
C	50%	"	50%	"
D	0	"	100%	"

Item B, I would consider very good, but more expensive and old-fashioned, also the leafmold and manure are in pretty short supply. Ten years ago we used this mixture and had very good results.

I consider about two soil mixes to be sufficient in raising a wide variety of plants. There are quite a few disadvantages in having 3 . . . to say . . . 8 or 10 different mixes:

1. Added labor cost
2. Takes too much space
3. More expensive
4. More complicated as to feeding

In conclusion, I would suggest you use the materials most readily available in your locality that are moderately priced and work out a formula with a soil chemist or a plant laboratory. Remember most of all, whether you are growing plants chemically or organically, you should think about the customer purchasing the plant material which has been grown in your particular soil mix. What is it going to look like in 2 weeks or a month after delivery? Nice and healthy or yellow, pale and sick looking? The remedy . . . if the plant material is chemically grown; before it leaves your nursery, feed one to two teaspoons per can of a complete mix of the 12 chemical elements for a good healthy looking plant.

If the mix in the container was organic, this is not necessary; because of the mix, the chemical elements are slower-releasing and will last longer in feeding the plant. How much of this is being done? Very little. I have seen plants grown in containers which look very healthy and vigorous at the wholesale nursery but a month later, in the retail nursery, look sick and pale. Let's remedy this situation and keep the customer coming back . . . that's what keeps us in business and makes us a success.

MODERATOR JOE KLUPENGER: Our next speaker is one from the Western Washington Experiment Station at Puyallup. He is known throughout Washington. He is a man that has been doing a lot of work in past years and is here to bring us forward with good information. He is going to speak today about how to put buds on rhododendrons; here is no one other than Art Myhre!