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POTTING SOILS FOR HOUSEPLANTS

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The beauty of foliage, flowers and form is not the only reason for growing plants indoors. A deeper appeal is the challenge of keeping them thriving under household conditions and providing a bit of spring and summer to our lives during the long winter season.

A great deal is said concerning "green thumbs" or having "luck" with plants. There's no such thing as luck. Give plants what they need and they'll do well for you. Give them just about what they need and they hold their own. Deny too many of their needs and they fail.

People bring plants indoors to look at. Why not look? If a plant's color is poor, its leaves or flowers are distorted, or the plant tends to droop, there's something wrong. It's up to you to see these distress signs and correct the problem. It's more gratifying to find out the "why" yourself than to seek help from someone else.

For example, the leaves of your plant are limp. Wilting or partial wilting can be caused by lack of water or too much water. Check to see the cause by pressing your finger, up to the first knuckle, into the soil. If the soil is dry to this depth, the plant needs water. If moisture is felt, too much water in the root area may be the problem. The roots may be saturated or rotting and incapable of absorbing water from the soil and supplying it to the leaves.

Don't be afraid to remove the plant from the pot and examine the roots to see if they are too dry, too wet or diseased in some way. To do this, merely invert the plant and lightly tap the edge of the container on a solid object while holding the plant and soil ball. You may find the soil mass is completely enveloped in roots. Your plant may need repotting in a larger container.

Thus, you have come to grips with plant problems. To work with living plants is to develop a seeing eye. Just looking is not enough. You must learn to see.

The Basic Rules - The growth requirements are not absolute, but if you understand these few principles, both you and your plants will be happier.

Soil

Keep in mind that the roots of plants must have air, food and water. Now you're well on your way to knowing the kind of soil to use for potting. Good soil drainage is a key to success, and potting soil must be porous enough to allow drainage of excess water and to admit the oxygen (soil aeration) needed by the roots.

How many times have you gone to your garden and taken soil which you thought ideal for potting your indoor plants? In most instances, this soil was wonderful for outdoor gardening under natural conditions, but you soon discovered that this soil in your pots became hard and almost rock-like.

Your plants grew satisfactorily for a month or two, but soon the lower leaves yellowed, and the plants became unthrifty. The problem resulted from poor drainage and lack of soil aeration due to poor soil structure. Ordinary garden soil packs down easily and house plants grow very poorly in packed soil.

A proper soil mixture is of utmost importance to a house plant because its roots are restricted to a pot. A satisfactory soil must have the capacity to retain some air, therefore, never becoming waterlogged. It must retain some moisture so daily watering isn't essential, and it must contain nutrients. Sand or perlite added to the soil will aerate it; clay or organic matter will help hold the water; and organic matter, plus commercial fertilizers, will keep the nutrient level adequate.

For general use, a good soil mix includes approximately equal parts of good garden loam, organic matter (preferably peat moss, although well-rotted manure or leaf mold will do) and sharp sand or perlite. When sandy soil is used in the mixture, reduce the amount of sand or perlite.

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Potting

Always use clean containers and when possible, with proper drain holes. Cover the holes with pieces of broken clay pots or coarse gravel. Then add peat moss, dried leaves or even straw to keep the soil from washing through or clogging the drainage.

Next add potting soil deep enough to bring the soil level of the finished planting to about a half inch below the rim of the pot. This space serves as a reservoir for watering. When repotting, cover the old soil level with about a half inch of new soil.

Firm the new soil around the root ball and water well to eliminate air pockets. Keep new transplants out of drafts and provide extra humidity (you can cover with plastic at night) to offset transplanting shock. Water sparingly and don't feed the plants for a few weeks until new root growth begins, and the plant is well established. Many authorities recommend adding fertilizer to potting soil when mixing. However, if you use good garden soil as part of your soil mix, added fertilizer is not necessary at this stage for new transplants. Excess fertilizers can damage the newly developing root hairs and delay plant growth.

Watering

The main idea in watering is to keep the soil moist enough to supply the plant needs without drowning the roots. Saturated soil drives out air, and roots die from lack of oxygen. This is why pot drainage is critical. All the soil in a pot should be thoroughly wetted each time the plant is watered, but do not water until the soil approaches a stage of dryness that almost denies the plant the moisture it needs.

The root area of succulents and other dry-soil plants can become drier before watering than that of moist-soil plants, such as ferns and African violets.

Close observation and personal judgment is the only sound basis for watering house plants. Growing conditions vary from home to home, temperature (day and night) and humidity. Some plants with roots in shallow containers may need daily watering, while plants in large tubs may go several weeks without watering.

Feeding

There are many brands of fertilizers made especially for house plants. Follow the manufacturer's directions when used. Do not assume that if a recommended amount is good, twice that amount is better. You may damage your plants.

If you discover that you have overfertilized, you can reduce injury to your plants by leaching out part of the dissolved fertilizer by "rinsing" the soil

with clear water. To do this, you should have a well-drained soil in a container with a drain in the bottom. Place the pot in a sink and water liberally three to four times at half-hour intervals, allowing the water to flush out the dissolved fertilizer and other accumulated salts. Leaching (rinsing) the soil of most house plants every three to six months is a good practice whether overfertilization is involved or not.

You should not expect fertilizer to cure all ills. Feeding will not help a plant that is suffering from poor drainage, insect infestation, disease or over-watering.

Most of you have probably noticed a white, flaky appearance on the soil surface of your potted plants after a period of from one to several months. These are mineral salts that accumulate in the soil. Why? Most well water in North Dakota contains varying amounts of dissolved salts, and with continuous watering, these dissolved salts accumulate in the soil and appear on the soil surface. They can be flushed out from time to time to prevent salt injury to your plants. This can be done by thoroughly wetting the soil to dissolve these salts and then flushing them down through the soil to remove them.

Diseases and Insects

Disease is less common on house plants than on greenhouse grown plants because the atmosphere is normally much drier, and fungi and bacteria do not develop as readily.

When mildew or leafspot occurs, it's normally the result of excessive wetness or humidity. Avoid wet foliage. Root rots and crown rots are usually associated with poor drainage and excess watering. Therefore, the only satisfactory control is to correct your watering pattern and/or improve the soil drainage situation.

The most common house plant pests are aphids, scale insects, mealy bugs and whiteflies. Spraying or dipping in properly diluted Malathion insecticide kills all except mites. Always follow the manufacturer's directions on the label when using pesticides. You may want to treat your plants in the garage (if warm) or in the basement to reduce chemical odors in your home.

To control mites, both the common red spider and others such as cyclamen mite, spray or dip the plant in Kelthane or Dimite. The most important aspect of insect control is to take action as soon as you see the bugs. Don't wait until your plants are weakened. The same principle applies to all facets of horticulture.

CAUTION: Be sure to keep all chemicals out of reach of children. Read labels before using.

PROPAGATING PLANTS

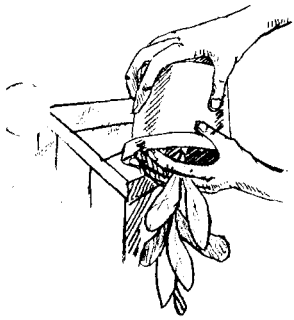
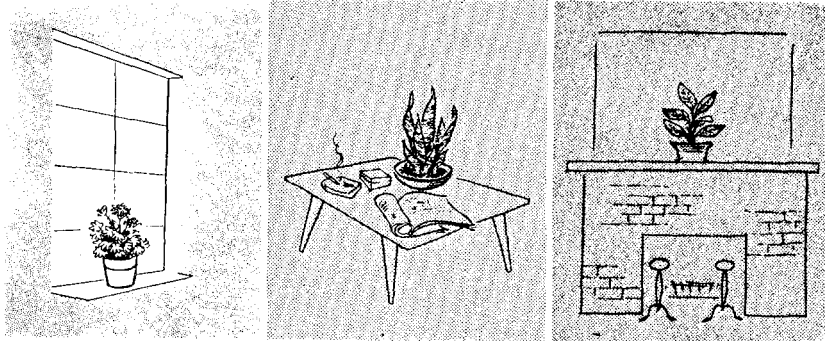


Fig. 1. Removing plant from container



High Medium Low

Fig. 2. Degrees of Distance from Light Source

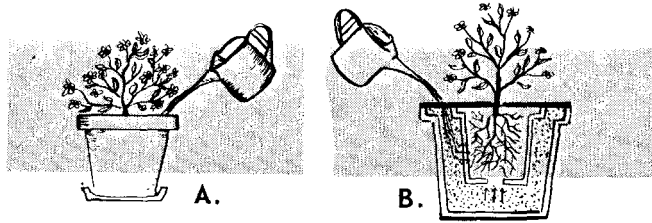


Figure 4. Methods of Supplying Soil Moisture

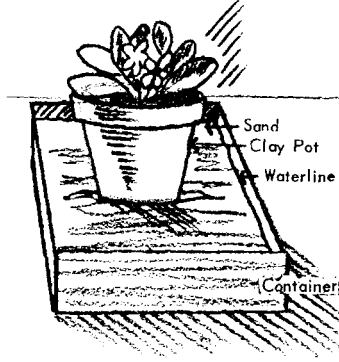


Figure 5. Increase Humidity Level

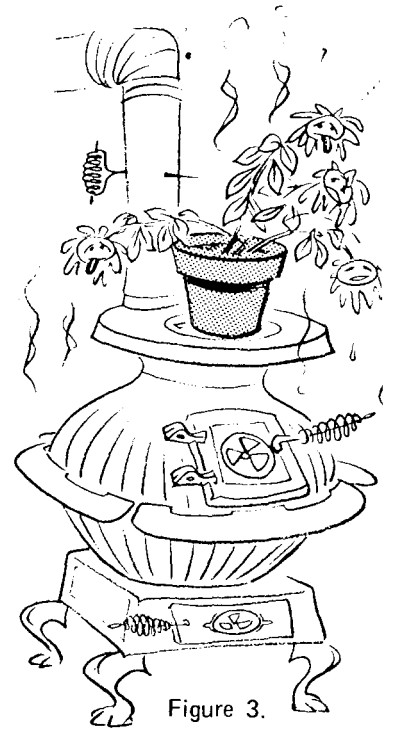


Figure 3.

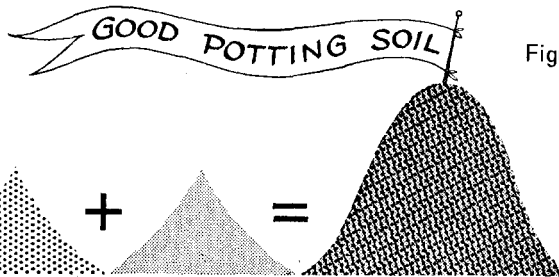


Figure 6.

OIL PEAT SAND

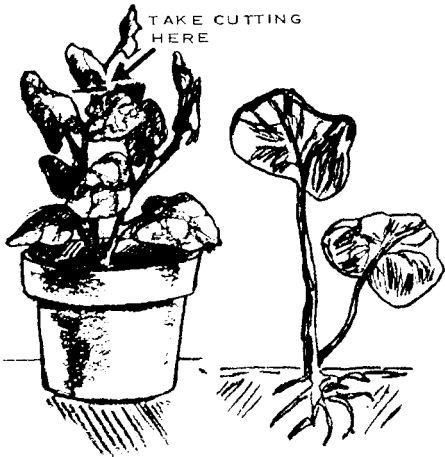


Figure 7. Stem Cutting

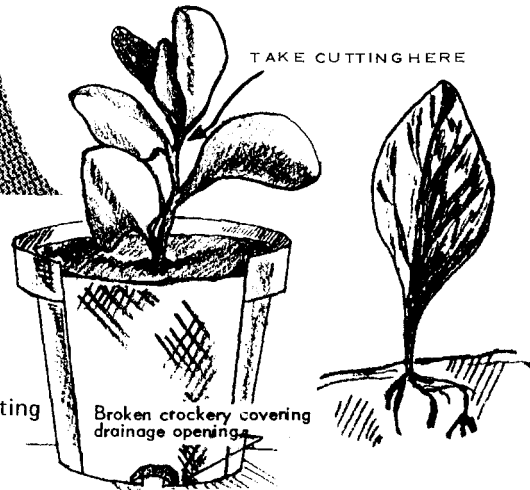


Figure 8. Leaf Cutting



Figure 9. Propagating sansevieria



Figure 10. Dividing African violets

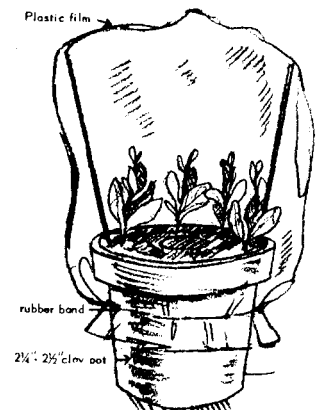


Figure 8. Leaf Cutting

The following is designed to assist the indoor gardener in diagnosing common ills of house plants. For specific rates of application of insecticides and fertilizers, follow manufacturers recommendations carefully.

LEAVES DISCOLORED WITHOUT OBVIOUS DRYING OR BROWNING

Symptoms	Cause	Remedy	Plants Affected
Leaves generally pale or yellowed. Lower leaves may be completely yellow or dying.	Lack of nitrogen or poorly aerated soil.	Fertilize with nitrogen fertilizer or check and improve drainage.	All plants.
Leaves generally pale or yellowed; stem elongated. Uppermost leaves most affected.	Lack of light.	Increase light intensity.	All plants, especially under severe conditions. Shade-loving plants least affected.
Leaves appearing bleached or faded sometimes in shadow pattern.	Too much light. Shadow pattern is due to strong, hot light from one side as through window glass.	Use partial shading.	Shade-loving plants (philodendrons) most easily affected. Plants grown in a house and moved outdoors may be affected quickly.
Leaves pale to severely yellow with veins appearing darker. Uppermost leaves most severe in most cases.	Usually a deficiency of iron.	Use Versenol as instructed by manufacturer. Add one-third to one-half acid peat to potted plants.	Most plants, although acid-loving plants (azaleas, gardenias), are most severely affected.
Leaves bronzed or abnormally reddened.	Lack of phosphorous or potassium.	Fertilize with complete fertilizer or repot in "new" soil.	All plants; most common on potted plants in small containers.
Leaves very finely speckled with faintly lighter color. Lower leaves sometimes partially yellowed. Under surface of leaves appear dusty.	Spider mites, very small insects.	Spray with Malathion or Kelthane.	Most plants.
Leaves spotted or broadly mottled with light areas. Upper surface affected only.	Cold water on leaves.	Avoid cause. Present damage cannot be remedied.	African violets and gloxinias.