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ROOTONE ON BULBS

ROOTONE dusted onto gladiolus bulbs, Dutch iris, etc., stimulates root growth and is particularly valuable on the smaller size bulbs, in getting bloom the first year. It stimulates germination of gladiolus bulblets. Onion sets show better germination and faster growth with ROOTONE treatment.

ROOTONE ON POTATOES

Apply ROOTONE to the cut seed potatoes with a duster, or shake the seed potato in a bucket with ROOTONE, so that each piece receives ROOTONE on part or all of its surface. Use an ounce to the bushel of seed. Slow rooting varieties have increased in yield in field tests.

ROOTONE can be applied at the same time with other dry seed treatments.

ROOTONE®

IMPROVED
ROOTONE

IMPROVED
ROOTONE
WITH FUNGICIDE

ROOTONE
NO.10
MORE THAN DOUBLE STRENGTH

AMCHEM® PRODUCTS, Inc.
Ambler, Pa. • Clinton, Iowa • St. Joseph, Mo. • Fremont, Calif.

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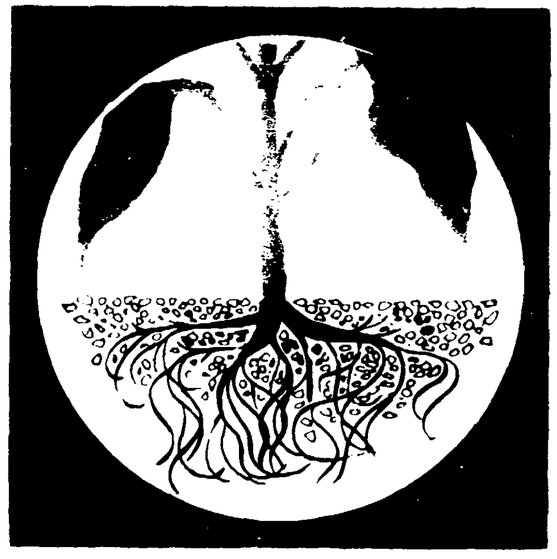
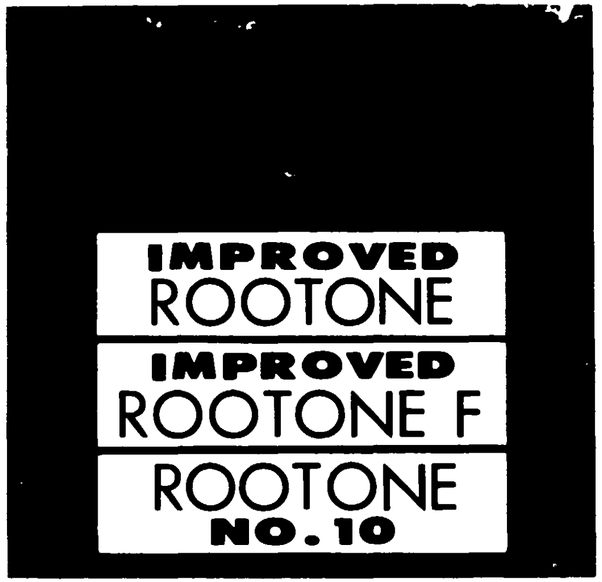
INCREASE PLANTS IN HOME & GARDEN WITH

AMCHEM®

IMPROVED ROOTONE®
IMPROVED ROOTONE F
ROOTONE NO.10





For more detailed information on propagating plants, we suggest the following books as references. Your bookstore will be glad to order them for you if they are not already in stock:

(1) FREE, MONTAGUE. *Plant Propagation in Pictures*. Doubleday & Company, Inc., New York City, 1957. 249 pages. Short introductions to various aspects of plant propagation followed with step-by-step pictures explained by captions.

(2) HOTTES, ALFRED C. *How to Increase Plants*. A. T. De La Mare Co., New York City, 1949. 279 pages. A guide to plant propagation.

(3) KAINS, M. G. and McQUESTEN, L. M. *Propagation of Plants*. Orange Judd Publishing Co., New York City. 1956. 650 pages. A guide for professional and amateur growers of plants with chapters on nursery and greenhouse management.

(4) MAHLSTEDE, J. P. and HABER, E. S. *Plant Propagation*. John Wiley & Sons, Inc., New York City, 1957. 413 pages. Covers the basic principles and practical aspects involved.

(5) THIMANN, KENNETH V. and BEHNKE-ROGERS, JANE. *The Use of Auxins in the Rooting of Woody Cuttings*. Pub. No. 1, Harvard Forest, Petersham, Mass., 1950. 344 pages. Compilation of published research work on the subject.

(6) WELLS, JAMES S. *Plant Propagation Practices*. MacMillan Company, New York City, 1955. 344 pages. Detailed procedures for a select group of plants including rhododendrons, azaleas, yews, hollies and others.

ROOTONE is a carefully formulated easy-to-use powder containing synthetic plant hormones or growth substances and a protective fungicide. ROOTONE stimulates the natural tendency of roots to form on slips or cuttings so that rooting takes place in a much shorter time, a larger percentage are rooted, and there is an earlier development of more roots per cutting. Most unrooted cuttings live a limited time; they either root or rot. Cuttings which root rapidly are less likely to die and they are most resistant to loss from disease. The use of ROOTONE to stimulate rooting also extends the season during which cuttings may be taken successfully.

ROOTONE is a stimulant and not a fertilizer or plant food; plant nutrients must be supplied to the plant as usual. Also, treatment of cuttings with ROOTONE is only an aid to and not a substitute for care and skill in handling them.

For this reason we discuss here some important pointers for propagating plants successfully.

ROOTONE ON CUTTINGS

Many plants are propagated from cuttings because this method preserves the characteristics of the parent plant which are often lost in plants raised from seed. A mature plant is produced more quickly and the new plants will be true to variety. Also, some plants do not produce seed and can be propagated only vegetatively. Cuttings may be taken from different parts of the plant. Oriental poppies and bleeding heart are commonly propagated by root cuttings. Leaf cuttings of Rex begonias, African violets and several others root easily. Shoot cuttings of most house plants, shrubs and trees can be rooted, and are the type most commonly used.

Materials to use—It must be realized that in order to have strong healthy plants one must take cuttings from healthy vigorous stock. It is important to select the very best material for cuttings.

Clean sharp sand is probably the most useful medium for rooting cuttings since it is easy to handle, furnishes good aeration and drainage and can be sterilized readily. A mixture of equal parts sand and peat moss is another easily managed medium which suits many types of plants. Vermiculite, plain peat moss, ground spaghnum moss and soil are also used. If cuttings are to be rooted in water, use TRANSPLANTONE,® since ROOTONE is insoluble.

If there are only a few cuttings to be rooted, a simple and satisfactory container is an 8" bulb pan containing sand with a small empty pot in the center. The hole in the small pot should be corked and the pot filled with water, which gradually seeps through the porous clay and keeps the sand uniformly moist. A jar can be placed over the top to keep the atmosphere moist around the cuttings.

For a larger number of cuttings a Wardian case can be used, or a shallow box of sand with glass on each side and on top to conserve moisture. For full-scale propagation, regular greenhouse benches would be used. Cuttings of many perennials and woody plants can be rooted outdoors if placed in a sash frame containing a well drained sandy

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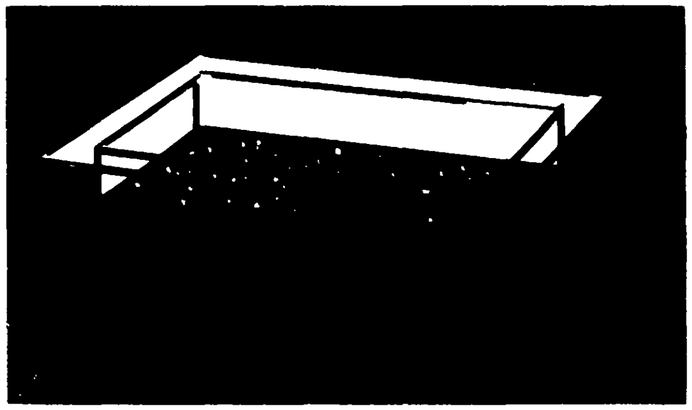
Making and rooting cuttings—Stem cuttings may be separated into three general groups according to the maturity of the wood used—softwood, half-ripe wood, and hardwood or dormant.

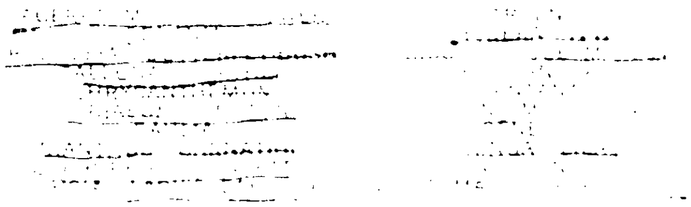


Softwood Cuttings, also known as slips, are made from immature non-woody growth and include most house plants and perennials—begonias, fuchsias, ivy, chrysanthemums, geraniums. The cuttings should be from stems that are brittle and snap readily. Use tip cuttings 2" to 6" long, depending on the size of the plant. With a sharp knife cut just below a node or leaf. Remove any flower buds and the leaves from one or two nodes at the base of the cutting. Dip the cutting in ROOTONE about ¼" deeper than it will be set in the rooting medium. This is so ROOTONE's fungicide can protect the cutting at and immediately above the soil surface, where rot is most likely to start. Shake off the excess ROOTONE, leaving only a thin layer, and insert in a hole in the rooting medium with at least one node covered. The hole or trench should be wide enough so that no ROOTONE will be scraped off in planting, and the sand should then be firmed around the cutting to avoid air pockets.

The best rooting temperatures for different kinds of cuttings vary. For most of them, about 65°F. to 70°F. is ideal, with the sand 5° to 10° warmer than the air if possible. Slight bottom heat from a radiator or other source will usually stimulate root action.

Most cuttings do best in a moderately moist atmosphere, although some prefer a dry one, and others (like crotons and other large-leaved conservatory plants) require a close humid atmosphere. The sand should be kept moist, neither soggy nor dry. Sprinkling the foliage occasionally often helps keep the leaves firm, and newly placed cuttings should be shaded from strong sunlight to avoid wilting. As roots begin to form, the amount of light should be increased so that the cuttings are in full sunlight as soon as they have enough feeding roots to sustain them. There are a few exceptions to this, African violets and begonias preferring some shade at all times. As soon as good roots have formed, it is necessary to provide nutrients to keep them growing and the cuttings should be potted up in soil or set out in a protected place.

Plants commonly increased by softwood cuttings:

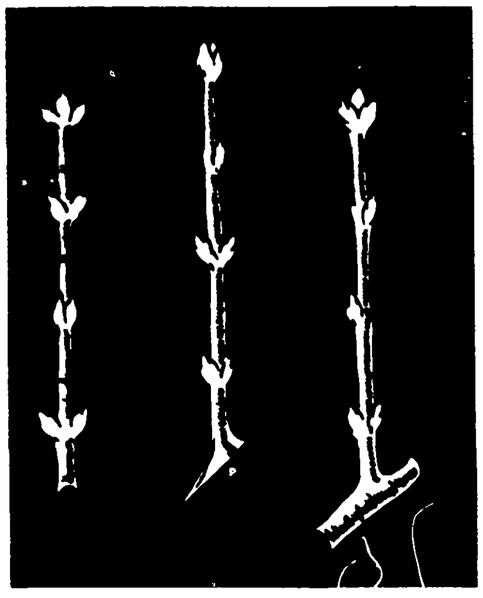


Summer cuttings of half-ripened wood are made from woody plants such as roses, forsythia, spirea, azalea, etc. Shoots showing a normal rate of growth, neither too vigorous nor stunted should be used. The cuttings should be about 3"-6" long. The time would be from May to September, depending on when the plant makes its new growth. They are treated much the same as softwood cuttings, except that they are a little longer, and leaves from the bottom two or three nodes are removed so they can be set more deeply in the sand. Also, the pot, or frame, should be covered closely to maintain a close humid atmosphere. Inverted fruit jars can be used successfully if only a few cuttings are to be made, or a box with glass over the top.

Hardwood or dormant cuttings are taken during the fall or winter when the wood of the previous season's growth is fully ripened. These cuttings are usually cut into pieces

about 6" long and tied in convenient bundles with the tops all the same way. These bundles are buried in boxes of moist sand or peatmoss in a cool cellar. By spring these cuttings will have formed calluses on the lower end. They can then be dipped in ROOTONE and planted a few inches apart in a row in the garden, with about one-third of the stem above the soil. The same results can be obtained outdoors by burying the bundle in sandy soil below the frost line. A mulch over the soil will retard deep freezing.

Evergreens are propagated by hardwood cuttings handled as described for half-ripened summer cuttings. They root very slowly and should not be taken until after frost. Beside the simple stem cutting already described, heel and mallet cuttings are also used. The heel cutting has a small slice of the parent stem attached at its base, and the mallet cutting has a piece of the entire stem to which it was attached.



There are many other ways (such as root cuttings, runners, offsets, rhizomes, etc.) to propagate plants, but most of these methods are suitable only for certain definite plants. *Layering* is one method which is worthy of consideration by the amateur because it is so simple and dependable. Plants like quince, forsythia, cotoneaster, ivy or sweetshrub which have low-growing branches can be brought into contact with the ground and made to root before severing from the parent plant. The branch is cut slightly where it will touch the ground and propped open with a toothpick. ROOTONE is then dusted on this part of the stem. Pin the treated section to the ground with a bent wire and cover with soil or peatmoss, with the tip of the branch exposed. After the stem has rooted, it should be removed and planted as usual.

Air-layering is a good method for rooting difficult material such as rhododendron, holly and many large deciduous trees. In late spring a 3" slit cut is made down the middle of a lead-pencil size shoot of the current year's growth. The cut surfaces are dusted with ROOTONE and moist sphagnum moss packed into the cut and all around the outside. The ball is then completely covered with Polyethylene plastic film, sealed and left until the plant drops its leaves. The rooted twigs can then be removed, potted and kept in a protected place over the first winter.

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