PUMICE AS A ROOTING MEDIUM

KEN INOSE

K & Y Nursery, Inc.
Gardena, California

The source from which we get our pumice is on the Eastern slopes of the High Sierras near Bishop, California. It is mined, screened and graded at the mine and delivered to our nursery in bulk. It is not heat treated and is chemically inert with a neutral reaction. The chemical composition of pumice is as follows:

Silica (SiO_2)	67.98%
Aluminum oxide (Al_2O_3)	16.98%
Iron oxide (Fe_2O_3)	0.24%
Titanium oxide (TiO_2)	0.06%
Calcium oxide (CaO)	0.64%
Magnesium oxide (MgO)	2.90%
Sodium oxide (Na_2O)	2.84%
Potassium oxide (K_2O)	0.09%
Loss on ignition	7.95%
Sulfuric anhydride (SO_3)	none
	99.66%
Water soluble potassium oxide (K_2O)	Trace

We buy the ⅛ to ¼ inch grade in 40 cu. yd. loads weighing approximately 25 tons. The cost is about $25 a ton delivered.

Some of the advantages of this material are that it is sterile and it also has very good drainage when used with a mist system. Because of the latter characteristic we are able to use, to our advantage, a non-clogging, high volume mist head, manufactured by Spraying Systems Co., Chicago. (It is a 160° parasol head No. ¼ E 5.8 with each head covering about 36 sq. ft. at 60 pounds pressure).

We root all our conifers and our hard-to-root broad-leaved evergreens in straight pumice under mist. In rooting hard-to-root cuttings, we feel that pumice has advantages over other materials in lower water retention and good bottom drainage. We also feel that the slight additional cost of pumice is offset by the increased rooting percentage and the quality of the root systems formed.

In conclusion I will add that no matter what rooting medium is used the following conditions are necessary for success. Clean mother

stock, proper sanitation practices, proper relationship between air movement, light, temperature, and something that is very important in southern California, good quality water.

REFERENCE

Hartmann, H. T. and D. E. Kester. 1968. Plant Propagation: Principles and Practices, 2nd Edition. Prentice-Hall, Englewood Cliffs, New Jersey.

MODERATOR BRIGGS: Thank you, Ken. I know there'll be a lot of questions after a bit on that because many people are concerned about using pumice. I know we've looked at it many times.

Bob King is now going to talk on the relation of light, temperature, and humidity as it affects plant propagation. Bob, it's all yours:

THE BALANCE OF LIGHT, HUMIDITY AND TEMPERATURE AS RELATED TO CUTTING LEAF DROP

ROBERT W. KING

California Propagation Company
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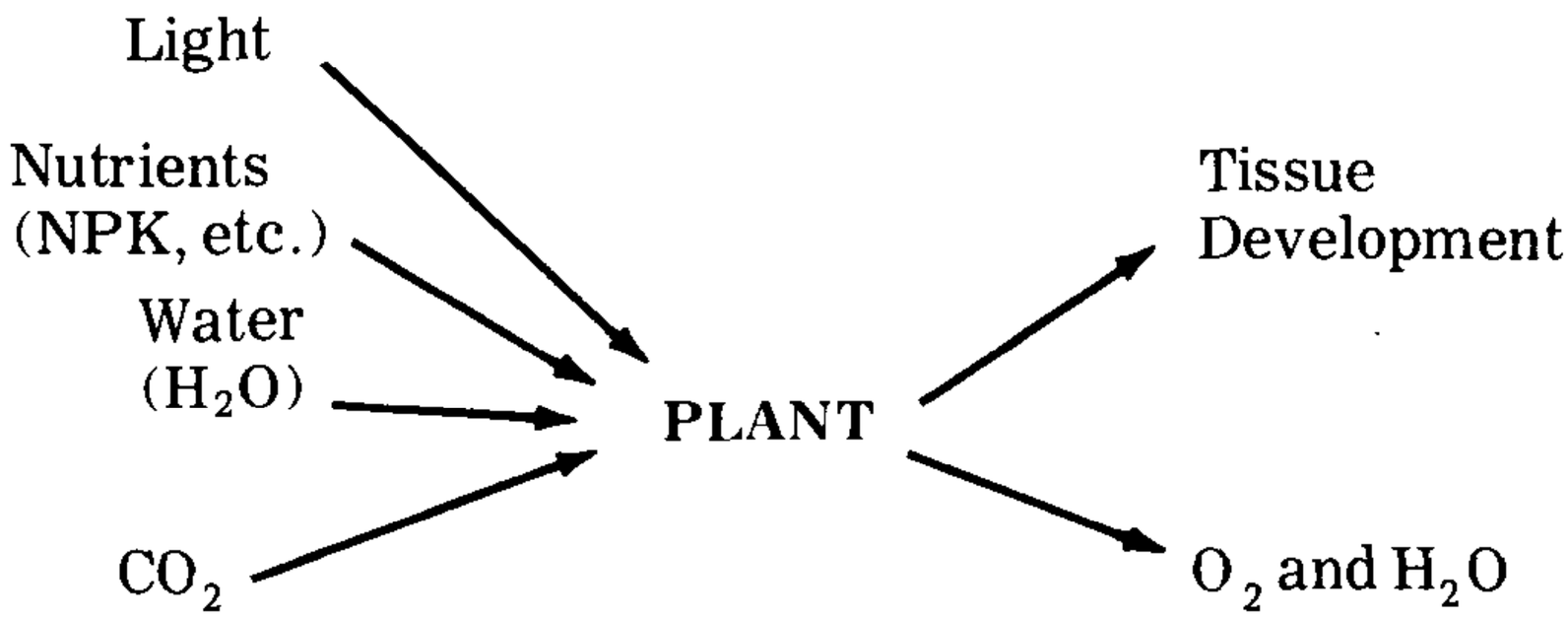
The very complex chemical mechanisms involved in plant development and growth can be summed up simply as follows:



the reactants (materials at left) entering into the plant system and being transformed into the products (materials at right).

Horticulturists have learned by experience that by increasing the amount of the reactants, the amount of products also increases. (chemists call this Le Chateliers' principle). Thus a well-watered and