

STUDIES ON VEGETATIVE PROPAGATION OF NUTMEG

By

AHAMED FAZAL SULTANBAWA, B.Sc. (Agric.) Sri Lanka

Thesis

Submitted in partial fulfilment of the requirements

for the degree of

MASTER OF PHILOSOPHY

in

Agriculture

in the

POSTGRADUATE INSTITUTE OF AGRICULTURE

of the

UNIVERSITY OF PERADENIYA, SRI LANKA

Approved.

Peranayake

Abul Ibrahim

R. H. Clements

Examination Committee

28 May 1984.

C 633.83

S74



369397

AGRICULTURE LIBRARY
UNIVERSITY OF PERADENIYA

369397 A

A B S T R A C T

Different methods of vegetative propagation such as air layering, budding, grafting and rooting of cuttings using rooting hormones and different rooting media, were studied to overcome diocy and disadvantages associated with seed propagation in Nutmeg (Myristica fragrans Houtt.).

Rooting of two-node lateral branch cuttings at 6 months was poor (<20%) whereas in water shoots, best results were observed using greenwood cuttings grown in coir dust and treated with 'Seradix' (IBA). Here, callusing was observed in all cuttings and roots in 70% of them. High relative humidity, application of systemic fungicide ('Benlate') and foliar fertilizer (Hyponex 20-20-20) had no significant direct effect on rooting, but were necessary for survival of cuttings.

Emergence of the roots was from the base of the cutting. Roots were not of the fibrous (adventitious) type, but consisted initially of one or two thick, unbranched growths lacking root hairs. Side roots arose from these subsequently.

Air layers did not root even after 293 days. Application of rooting hormones failed to promote rooting.

Wedge grafting of lateral branches onto 3 week old seedling stocks gave the highest success of 43%. Successful grafting was possible only with young seedling stocks and at high relative humidities. Budding, splice grafting and side grafting were unsuccessful.

Growth of grafted plants was slow, but not significantly slower than growth rates of seedlings of the same age.

17 JAN 1935
LIBRARY