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PROPAGATION OF ACTINIDIA CHINENSIS (PLANCH.)

BY STEM AND ROOT CUTTING

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ABSTRACT

Basal wounding, bottom heat, light with IBA treatments were found to be beneficial for rooting of Actinidia chinensis (Planch.). IBA treatment was effective only when there was a high natural ability to initiate root in Summer and Spring.

Seasonal fluctuations in rooting ability was pronounced. This seasonal variation seems to be related to the levels of endogenous IAA, ABA and cofactor 2. No correlation between root initiation and bud activity or IAN level was established.

IAA seems to be the fundamental physiological promoter of adventitious root formation. IBA plays only a supporting role in promoting root formation, by protecting the endogenous IAA level in the cutting base.

Leaf tissue is an important factor for rooting to be successful. The role of leaf tissue is not just to produce auxin or synthesize nutrients but rather some unknown factor in the leaf can produce a synergistic interaction with auxin in root formation processes.

Root cuttings of Abbott variety were sequentially harvested and planted over a period from late Autumn (1.4.77) until mid Summer (8.1.78). Root cuttings of different thickness and length were compared to evaluate their effect on regeneration. The effect of various growth regulators was investigated too.

Root diameters of 0.5 - 1.5 cm. out performed that of the thinner or thicker ones. Shorter cuttings (5 cm) of equivalent total length were found to be more productive than a single long cutting (15cm). Strong polarity was observed with shoots only arising from the proximal end of the cutting.

Regenerative capacity was highest in late Autumn and Winter and lowest in Summer. This seasonal fluctuation

can be altered by exogenous application of growth regulators. IBA suppressed shoot regeneration, whereas cytokinin and sucrose promoted it, while GA3 did not have any significant effect.

For commercial use, the practical and economic aspects of this technique require further investigation.

Glossary of Abbreviations

IAA	=	indoleacetic acid
IAN	=	indoleacetic nitrile
IBA	=	indolebutyric acid
ABA	=	abscisic acid
GA ₃	=	gibberellic acid
GA	=	gibberellin
BAP	=	benzylaminopurine
DNA	=	deoxyribonucleic acid
RNA	=	ribonucleic acid
PPM	=	parts per million
P	=	probability
X	=	0.1%
XX	=	0.05%
XXX	=	0.001%

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