

EFFECT OF PRE-PLANTING DIPS ON TREE ESTABLISHMENT

Objective

Enhance tree establishment by stimulating vegetative and root growth, without inhibiting flower bud production.

Site H P Bulmer's Farm at Penrhos, Llantilio Crossenny, Abergavenny.

Treatments: pre-planting root dips.

- 1] Synergol root hormone diluted 1:25 with water.
 - 2] Water control dip.
 - 3] As 1] plus 1g Celcote in planting hole.
 - 4] As 2] plus 1g Celcote in planting hole.
- Dip treatments made just prior to planting by machine 1.4.97

Replicates

4 treatments x 15 reps = 60 trees

Records

- 1] Tree height and girth at planting.
- 2] Number of laterals at planting.
- 3] Tree height and girth during summer [July] and at end of growing season.
- 4] Number of new laterals in first year.

Results

Tree growth increases are tabulated overleaf. There were no significant differences between treatments.

The first records made during July showed trees treated with both hormone and Celcote had slightly longer leader shoots but had made a smaller girth growth increment. Celcote treated trees had made slightly more girth growth at this stage. But by the end of the season this was no longer apparent, the mean height of all treated trees being less than the controls.

Because of differences in the numbers of lateral shoots between all the trees, figures were adjusted by the removal of all replicates with excessively high [>30] or low [<15] numbers of laterals, and girth and leader shoot growths were reassessed. In this analysis dipped trees had slightly more new lateral shoots by the end of the year, but Celcote treated trees still had fewer than controls.

Table 1

ACTUAL GROWTH INCREMENT MEANS IN YEAR 1			
TREATMENT	LEADER	GIRTH	NEW SHOOTS
HORMONE	71.3	3.7	11.9
CELCOTE	72.0	3.6	10.9
HORMONE + CELCOTE	72.5	3.3	10.3
WATER CONTROL	74.3	3.4	12.8

Table 2

LEADER SHOOT MEAN EXTENSION GROWTH [CM]				
TREATMENT	INITIAL TOTAL HEIGHT	JULY	DECEMBER	FINAL ADJUSTED
HORMONE	132.0	39.7	71.3	72.3
CELCOTE	131.9	39.6	72.0	71.0
HORMONE + CELCOTE	134.8	43.6	72.5	72.6
WATER CONTROL	134.9	39.6	74.3	73.8

Table 3

MEAN GIRTH GROWTH INCREMENT [CM]			
TREATMENT	PLANTING - JULY	PLANTING - DECEMBER	FINAL ADJUSTED
HORMONE	1.8	3.7	3.8
CELCOTE	2.0	3.6	3.6
HORMONE + CELCOTE	1.6	3.3	3.3
WATER CONTROL	1.8	3.4	3.4

Table 4

MEAN NUMBER OF LATERAL SHOOTS PER TREE			
TREATMENT	AT PLANTING	TOTAL IN YEAR 1	TOTAL ADJUSTED
HORMONE	10.7	22.5	22.6
CELCOTE	9.7	20.7	19.8
HORMONE + CELCOTE	8.3	18.8	19.0
WATER CONTROL	10.3	22.5	21.5