

ABSTRACT

A Zoysia Cover System for Tropical Hillside Orchards

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In an attempt at improving Jamaican practice in growing fruit trees on hillsides, hand weeding, flame weeding and herbicide spraying were first confirmed to be unsatisfactory methods of weed control; the first being too costly in effort, the second dangerous, and the third producing damaging soil erosion.

An effort was made to develop dicotyledonous ground covers requiring no cutting. A lasting zero-cut turf comprising seven creepers was developed on a recent alluvium. However, that turf proved unable to resist erosion by concentrated water flows.

Zoysia tenuifolia was finally tested as a slow growing grass compromise; and this proved remarkably effective in slowing weed growth and stemming soil erosion. Plants grown in small containers (dubbed "ZT cells" or "Zoysia cells") were found an effective means of establishing *Z. tenuifolia* in rough situations. The hand tool control of *Z. tenuifolia* cover was developed into the "Zoysia Cover Mulch Circle" or "ZCMC" system. The labour requirement for good maintenance was experienced to be about 65 man days per year per hectare for a young orchard; less for a mature orchard.

In formal experiments, it was shown that:

(a) Artificial shade is undesirable in the nursery

production of ZT cells.

- (b) In the situations of the experiments, adequately developed ZT cells may be successfully planted out in any season without irrigation.
- (c) Fresh plugs of mature *Z. tenuifolia* sod, of 50 mm sides, are practically equivalent to 2 month old ZT cells (as developed in the experiments) in planting performance.
- (d) The fertilizing of trees by the "placement" method is compatible with the ZCMC system.

Recommendations are made for further study.