

Preselection Methods for Coffee Berry Disease Resistance in Ethiopia

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SUMMARY

Studies were conducted to determine as to which one of the pre-selection methods was the most reliable.

Field score using visual assessment and berry count techniques, detached berry test (DBT) and seedling tests were made on progenies of 1982 and 1985 selections.

In detached berry test (DBT) berries from progenies of test selections were inoculated with conidial suspension. Boxes were closed after inoculation. Nine days later, the number of diseased berries was recorded. In the seedling test six weeks old seedlings were inoculated with spore suspension. Four days later seedlings were uncovered and placed in growth room for three weeks after which number of infected seedlings were recorded. In DBT significant differences were observed between treatments and positive correlation ($r = 0.624$) and negative correlation's were observed with visual assessment and yield respectively. In seedling test 75% were in class 4, 5% in class I and only 2.8% were healthy. Weak correlation ($r = 0.268$) and ($r = 0.254$) for berry count and visual assessment respectively was observed between seedling test and field scores.

Field score technique using visual assessment was subject to human error and tended to under estimate or overestimate the actual loss. Berry count was found to be relatively better field score technique. During DBT berries are removed from their natural habitat and hence normal metabolism of berries could momentarily be disturbed making the method unreliable. On the other hand, if temperature and humidity are properly controlled, seedling tests are not mostly biased by environmental conditions and hence together with berry count, should be used as the most reliable technique.