

# OPTICAL MARK READER - AN OPTION IN DATA ENTRY IN OIL PALM BREEDING TRIALS

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MPOB INFORMATION SERIES (formerly known as PORIM Information Series)

ISSN 1511-7871

Oil palm breeding trials are usually large and many trials need to be laid down. Each trial consists of several thousand palms and each palm is extensively recorded for numerous agronomic traits. Field data are conventionally punched into the computer for analysis. This is laborious and time-consuming. An electronic means of direct data transfer from recording sheets to the computer was developed using dedicated software and an Optical Mark Reader (OMR) scanner. The objective is to increase the efficiency of data capturing and analysis.

## MATERIALS

Materials required are:

- Recording sheets - dedicated OMR sheets (Figure 1);
- OMR (Figure 2);
- Computer hardware (PC); and
- OMR computer software.

## THE OMR DATA CAPTURING SYSTEM

Currently, the system captures yield data from the OMR sheets with manual punching as a contingency measure. The option to incorporate input from data loggers is being developed (Figure 3). The system will have six main



Figure 2. OMR scanner and OMR recording sheet.

Options in data entry

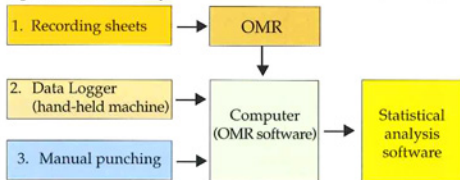


Figure 3. Options in data entry using the OMR software.

modules tailored to breeding trials (Figure 4). It is capable of, among others, data input, search, retrieve, edit, validation, summarizing reports and print.

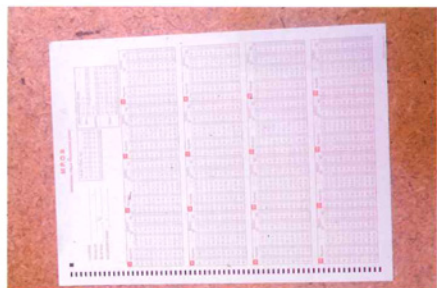


Figure 1. OMR sheet.

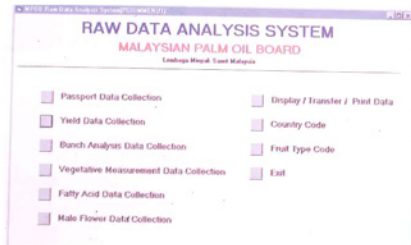


Figure 4. Main menu of raw data analysis system with six main modules listed on the left hand column.

ISSN 1511-7871



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The OMR recording sheets are similar to those used for answering objective questions in school examinations where answers are shaded/marked on prompted circles. In yield recording, say two bunches were harvested and the sum weight was 18 kg, on the recording sheet, the recorder will mark circle number 2 for bunch number, and circles number 1 and 8 for bunch weight. The recording sheets are scanned through the OMR. The marks (*i.e.* the data) are read optically, automatically stored in the PC and displayed on the monitor screen (*Figure 5*).

## CONCLUSION

The OMR has been effective in data capturing, detecting outliers, and preliminary summary of reports on daily, monthly and yearly basis. The system can be a stand-alone or connected to a local area network (LAN) for neighbourhood sharing.

*Figure 5. Data entry using OMR and OMR software automatically stores and displays raw data on computer.*

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