Oil Extraction Expressed as a Percentage of FFB Processed

(an article by J.H. Maycock of PORIM)

There has been a lot of talk and discussion recently concerning variations in oil extraction percentages and this has prompted me to write on this subject and to put forward details of a project I would like to carry out with the help and assistance of as many as possible of the Malaysian Palm Oil Mill Engineers.

Now we all know that expressing oil and kernel extraction rates against FFB processed can be misleading and to have any real meaning to the plantation people the extraction rates have to be calculated back to a 'per hectare' basis.

For the mill managers and/or engineers it would be more useful if the yields of oil and kernels could be expressed against MPD (mass passing to the Digesters) even though this neglects the losses in steriliser condensate and stripping. The type and accuracy of machines or equipment to weigh the MPD have yet to be fully assessed and, of course, their installation does involve a fair capital outlay.

From experience I have found that the moisture loss of FFB on sterilising can vary considerably and if this is taken into account it can give a better guide as to mill extraction rates. Let us take for example the following results:-

case i)	Oil extraction againt FFB	20%
	Moisture loss on sterilising	8%
case ii)	Oil extraction against FFB	18.5%
	Moisture loss on sterilising	15%

At first sight the reaction is to say case i) extraction is infinitely better than case ii) but let us express the oil extraction rates againts ' the weight of FFB leaving the steriliser'. We then have the following:-

case i) $\frac{20}{(100 - 8)} \times 100 = 21.74\%$

case ii) $\frac{18.5}{(100 - 15)} \times 100 = 21.76\%$

For the engineers who are prepared to help me in this study I would like them to carry out the following simple tests daily:-

Take one bunch at random in the morning, if possible with all its loose fruit, place it in a sack and weigh the sack and its contents.

Then place on top of one of the cages going into the steriliser. After sterilisation remove the sack and let it cool to ambient temperature and weigh again, hence giving the loss of weight on sterilising.

Repeat the operation again with another bunch in the afternoon.

Record daily the loss of weight of the bunches on sterilising and the oil extraction rate (normal method against FFB processed)

I would like the tests to be carried out for one year starting from the 1st. April, 1986 but would appreciate the results to be sent to me monthly.

I would be pleased to learn how many people are prepared to cooperate in this scheme.