THE INVESTIGATION

It was found that:

(i) the injured person had not received sufficient training and instruction in operating the machine.

(ii) the guard was not in position before the machine was put into operation.

PREVENTIVE ACTION

Be sure that the guard is always in its position before operating the machine. A spade should be used at every similar machine to push the materials.

Guards provided in compliance with the Factories and Machinery Act should not be interfered with.

ENSURE YOUR WORKING PROCEDURE IS SAFE.

QUALITY PARAMETERS

DOBI

DOBI is the acronym for "Deterioration of Bleachability Index". This parameter was introduced as a result of research by Dr. P.A.T. Swoboda (1982). DOBI can be easily obtained by simple spectro-photometric measurement and is used to predict the ease of bleaching of crude palm oil during refining.

Definition

DOBI is defined as the numerical ratio of the uncorrected absorbance at 446 nm to that at 269 nm.

Determination

A suitable weight of crude palm oil is dissolved in iso-octane solvent in a 25 ml volumetric flask to give a final concentration of about 0.5 to 1.0%. The absorbances at 446 nm and 269 nm are then measured using a suitable uv-vis spectrophotometer against a solvent blank. DOBI is given by the following formula :

$$\text{DOBI} = \frac{\text{Absorbance at 446 nm}}{\text{Absorbance at 269 nm}}$$

$$= \frac{A446}{A269}$$

A good quality crude palm oil is expected have a DOBI of 3 to 4 while average quality will exhibit a DOBI of 2 to 3. Very poor quality or sludge oil will show a DOBI of 1 or less.

Factors Affecting DOBI

1. From the above formula, it is evident that a low A446 and a high A269 will contribute to low DOBI value.

2. As A446 is related to carotene content (Eng. News. Issue No:11) and A269 is related to secondary oxidation of crude palm oil (Eng. News Issue No. 10), factors effecting these two parameters will thus also affect the DOBI value.

3. In order to have good DOBI values, attempts must be taken to minimise deterioration of carotene and also oxidation. The recommended precautions are essentially similar to those mentioned in issue No:9 of the Engineering News.

Ref: P.A.T. Swoboda (1982). Bleachability and the DOBI PORIM Bulletin No:5. Page 28 - 38.

(T.S. Tang)