ENSURING QUALITY FOR MALAYSIAN PALM OIL

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PRESENTATION OUTLINE

• INTRODUCTION

• MPOB AND CODEX

• MPOB's CODES OF PRACTICE

• LAWS, REGULATIONS & STANDARDS

• SUMMARY
Palm oil’s position as the world’s most traded and competitive oil.

85% of the oil is used for food

Highly demanded food source

It is important to have Stringent Food Safety Measures

Quality

Environmental Sustainability
INTRODUCTION

Ensure production of quality and safe palm oil through the supply chain

- Team Effort
- Government & Private Sector

Quality Assurance System → entire supply production, handling and service chains.

Mutual respect & shared responsibilities between all parties involved.
MALAYSIAN PALM OIL BOARD

• MPOB started as a Govt R&D Institute.

• MPOB is also now since 2000 the Regulatory Body that governs the entire Industry. MPOB ACT 582

Under the purview of the Ministry of Plantation Industries and Commodities
COD EX

• The Codex Alimentarius Commission (CAC) – established by The Food and Agricultural Organisation (FAO) and World Health Organisation (WHO) in 1963

– develops harmonized international food standards, guidelines and codes of practice to protect the health of the consumers and ensure fair trade practices in the food trade.
Codex Alimentarius Commission (CAC)

- Codex Committee on Oil and Fats (CCFO)
- Codex Committee on Food Labelling (CCFL)
- Codex Committee on Nutrition for Special Dietary Uses (CCNFSUD)
- Codex Committee on Food Additives (CCFA)
- Codex Committee on General Principles (CCGP)
- Codex Committee on Contaminants
IMPLEMENTATION OF CODES OF PRACTICE (COPS)

1. Code of Good Nursery Practice for the Oil Palm Nurseries
2. Code of Good Agricultural Practice for the Oil Palm Estates and Small Holdings
3. Code of Good Milling Practice for Palm Oil Mills
4. Code of Good Refining Practice for Palm Oil
5. Code of Good Crushing Practice for Palm Kernel Crushers
6. Code of Good Practice for the Handling, Transport and Storage of Products from the Oil Palm
7. Code of Good Practice for Bulking Installations
CODES OF PRACTICE

• FOOD SAFETY
• QUALITY
• ENVIRONMENT
Code of Good Nursery Practice for Oil Palm Nurseries

Starting point for production quality products:
Seeds → Seedlings → Trees → GAP → High yield FFB
Low quality Seedlings → low FFB yield

Seedlings → critical → life span for 25 years
Code of Good Nursery Practice

• Step towards controlling production of quality seedlings
• Acknowledge nurseries that achieve the standard
• Improve and maintain quality management
• Certificates → good practices of nursery & use for promotion
• Inspection by experienced MPOB officers
• Marks are given based on several criteria
Criteria

Infrastructure
Layout of nursery
Cleanliness
Management procedure of the nursery
Up-to-date log book
Nursery operation
Maintenance of area
Quality control system
Stock of seedlings
System of handling seedling stock prior selling
Managed by team of qualified manpower
Code of Good Agricultural Practices for Estate and Smallholdings

Quality of Palm Fruits

FFB Grading Manual

MPOB (Licensing) 2005 Regulations

MPOB Ripeness Standard for industry to conform
Sustainable Practices Adopted by the Industry

Good Agricultural Practices - Estates & Smallholders:
- Good water management
- Avoid soil compaction
- Maintain soil fertility
- Integrated pest management (IPM)
- Waste Management
Sustainable Practices Adopted by the Industry

(2)

- **Integrated Pest Management**
  - decreased reliance on harmful chemical pesticides
  - Increasing use of Biological Control - microbial pathogen
  - Barn owl to control rats
  - Beneficial plants e.g. *Cassia cobanensis* to control parasitoids

- Satellite monitoring of diseases
Sustainable Practices Adopted by the Industry

Conserve natural resources, reduce waste and plant cover crops
Reducing greenhouse gases by converting EFB and POME into compost
Sustainable Practices Adopted by the Industry

**ZERO BURNING POLICY**

Open Burning is NOT Tolerated during Oil Palm Replanting in Malaysia
# Current Biogas Projects

<table>
<thead>
<tr>
<th>Status</th>
<th>Number of Palm Oil Mills (Total Mills = 428)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant in Operation</td>
<td>56</td>
</tr>
<tr>
<td>Under Construction</td>
<td>15</td>
</tr>
<tr>
<td>Under Planning</td>
<td>150</td>
</tr>
</tbody>
</table>

**Climate Change Implication of NKEA-EPP5:**

i. Biogas from mills contain 65% methane and 35% carbon dioxide

ii. About 17 million tonnes of CO₂ eq can be avoided
CODE OF GOOD MILLING PRACTICE

- Certificate the mill as competent
- Good quality palm oil & palm kernel
- Minimal losses
- Safe working environment
- Free from pollution

Encourages improvement
Efficient operations
Competence level
MCC
Best practices
MPOA Code

Code of Manufacturing Practices for Malaysian palm Oil Mills

Microbiological, chemical & physical hazards

FFB reception → CPO + PK
CODES OF GOOD REFINING PRACTICE

Launched 1982

Good quality oil
Improve management practices
Undergone 4 revisions
Latest includes ISO 9000 and HACCP
Food Act (Act 281) 1983 & Regulations,
Regulation 38 – trace metal,
Regulation 41 – pesticide residues
Chemical contaminants

Regulating through adoption of the Code reduce/eliminate contaminants
HACCP in oil palm industry

“FOOD SAFETY IS NOT NEGOTIABLE”

HACCP Implementation in Oil Palm Refineries are well documented and proven practice to ensure high quality products
Assessment

- General management
- Food safety
- Training
- In-coming raw material
- Quality audit
- Staff efficiency
- Cleanliness or hygiene premises & factory
- Factory operations
- Quality assurance

- Storage
- Disposal of product
- Packaging plant
- Laboratory
- Safety
- Maintenance

RCOC Excellent mark
Validity 2 years

RCOC Good score
Validity 1 year
Code of Good Manufacturing Practices for Palm Kernel Crushers

PK          PKO
PKC         Animal
PKE         Feed

Registration Acts Regulations
System Process + GMP Plus + HACCP
Guidelines Good Crushing Practices for Processing PK ▶ CPKO & PKE

- Exam incoming PK
- Unloading raw material
- Kernel storage
- Inspection
- Monitoring KC plant
- Storage, handling, shipment of PKE & PKO
Includes

Quality of incoming raw materials
Location of Processing
Optimum conditions for processing raw materials
Documentation
Installation
Food safety measures

Inspection process
Handling and storage
Quality control
Hygiene
Design
Code of Practice for the Storage and Transport of Processed Palm and Palm Kernel Oils in Bulk


PORIM’s Recommended Practices for Storage and Transport of Processed Palm and Palm Kernel Oils in Bulk
Address contamination issues arise during storage, handling and transportation.
Laws, Regulations, Acts and Standards
Malaysian Standards, Acts & Regulations

- Ministry of Health – HACCP Scheme
- MS/ISO 22000 – Food Safety Management System
- MS/ISO 1480 – Food Safety According to Hazard Analysis & Critical Control Point System
- MS/ISO 1514 – General Principles of Food Hygiene
- Pesticide Act 1974 (Act 149) and Regulations
- Malaysian Food Act 1983 (Act 281) and regulations
- Malaysian Palm Oil Board Act
### EU Directives & CODEX Maximum Level for Contaminants in Vegetable OILs / Animal Feed

<table>
<thead>
<tr>
<th>Contaminants</th>
<th>EU</th>
<th>Codex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzo(a)pyrene – vegetable oil</td>
<td>2 ppb</td>
<td>-</td>
</tr>
<tr>
<td>Dioxin – vegetable oil, animal feed</td>
<td>0.75ppt</td>
<td>-</td>
</tr>
<tr>
<td>∑ Dioxins + dioxin-like PCBs</td>
<td>1.50ppt</td>
<td>-</td>
</tr>
<tr>
<td>- vegetable oil, animal feed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arsenic - vegetable oil</td>
<td>2ppm</td>
<td>0.1ppm</td>
</tr>
<tr>
<td>- animal feed (PKC)</td>
<td>4ppm</td>
<td>-</td>
</tr>
<tr>
<td>Lead - vegetable oil</td>
<td>0.1ppm</td>
<td>0.1ppm</td>
</tr>
<tr>
<td>- animal feed</td>
<td>10ppm</td>
<td>-</td>
</tr>
<tr>
<td>Mercury - animal feed</td>
<td>0.1ppm</td>
<td>-</td>
</tr>
<tr>
<td>Fluorine - animal feed</td>
<td>150 ppm</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium – animal feed</td>
<td>1 ppm</td>
<td>-</td>
</tr>
<tr>
<td>Nitrites (complete feedingstuffs)</td>
<td>15 ppm</td>
<td>-</td>
</tr>
<tr>
<td>Aflatoxin B1</td>
<td>0.02 ppm</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 1. MRLs of some compounds in RBD Palm and RBD Palm Kernel Oil

<table>
<thead>
<tr>
<th>Name</th>
<th>MRL</th>
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<tbody>
<tr>
<td>2,4,5-T</td>
<td>N.D.</td>
</tr>
<tr>
<td>Azocylotin, Cyhexatin</td>
<td>N.D.</td>
</tr>
<tr>
<td>Amitrole</td>
<td>N.D.</td>
</tr>
<tr>
<td>Captafol</td>
<td>N.D.</td>
</tr>
<tr>
<td>Carbadox</td>
<td>N.D.</td>
</tr>
<tr>
<td>Chloramphenicol</td>
<td>N.D.</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>N.D.</td>
</tr>
<tr>
<td>Coumafos/Coumaphos</td>
<td>N.D.</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>0.5</td>
</tr>
<tr>
<td>Daminozide</td>
<td>N.D.</td>
</tr>
<tr>
<td>Diethylstilbestrol</td>
<td>N.D.</td>
</tr>
<tr>
<td>Dimetridazole</td>
<td>N.D.</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>N.D.</td>
</tr>
<tr>
<td>Nitrofurans</td>
<td>N.D.</td>
</tr>
<tr>
<td>Propham</td>
<td>N.D.</td>
</tr>
<tr>
<td>Ronidazole</td>
<td>N.D.</td>
</tr>
</tbody>
</table>

Table 2. MRLs of some compounds in Crude Palm and Crude Palm Kernel Oil

<table>
<thead>
<tr>
<th>Name</th>
<th>MRL</th>
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<tbody>
<tr>
<td>2,4,5-T</td>
<td>N.D.</td>
</tr>
<tr>
<td>Azocylotin, Cyhexatin</td>
<td>N.D.</td>
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<td>Amitrole</td>
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</tr>
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<td>Captafol</td>
<td>N.D.</td>
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<tr>
<td>Chloramphenicol</td>
<td>N.D.</td>
</tr>
<tr>
<td>Chlorpromazine</td>
<td>N.D.</td>
</tr>
<tr>
<td>Coumafos/Coumaphos</td>
<td>N.D.</td>
</tr>
<tr>
<td>Diquat</td>
<td>0.05</td>
</tr>
<tr>
<td>Daminozide</td>
<td>N.D.</td>
</tr>
<tr>
<td>Diethylstilbestrol</td>
<td>N.D.</td>
</tr>
<tr>
<td>Dimetridazole</td>
<td>N.D.</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>N.D.</td>
</tr>
<tr>
<td>Nitrofurans</td>
<td>N.D.</td>
</tr>
<tr>
<td>Propham</td>
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<tr>
<td>Ronidazole</td>
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Malaysia’s Economic Transformation (2010-2020)
The New Economic Model has identified the right framework to drive Malaysia to achieve high income nation...

- **High Income**: Target USD 15,000-20,000 per capita by 2020
- **Sustainability**: Meets present needs without compromising future generations
- **Inclusiveness**: Enables all community benefits from the wealth of the country
Malaysia’s Economic Transformation Programme (2010-2020)

Palm Oil National Key Economic Areas (NKEA): 8 Entry Point Projects (EPPs)

**IMPROVE UPSTREAM PRODUCTIVITY & SUSTAINABILITY**

1. Accelerate Replanting
2. Improve FFB Yield
3. Improve Workers’ Productivity
4. Improve Oil Extraction Rate (OER)
5. Develop Biogas Facility at Mills

**ENHANCE DOWNSTREAM EXPANSION & SUSTAINABILITY**

6. Focus on high value oleo derivatives
7. Commercialise 2nd Generation Biofuels: Bio Oil
8. Expedite Growth of Food and Health Based Segment

**UPSTREAM GNI IMPACT : RM33.1 billion**

**DOWNSTREAM GNI IMPACT : RM14.0 billion**

(USD11.03 billion) (USD4.67 billion)
ESTABLISHMENT OF CODES

- Address issues related to food safety, quality and sustainability
- Compliance with related regulations
- Traceability
- Specific for palm products
- Moves away from complying with generic standards and voluntary certification not specific for palm products
- Specific guidelines certified under these systems which meets and exceeds market requirements on food safety and quality
Thank You for Your Kind Attention

http://www.mpoob.gov.my