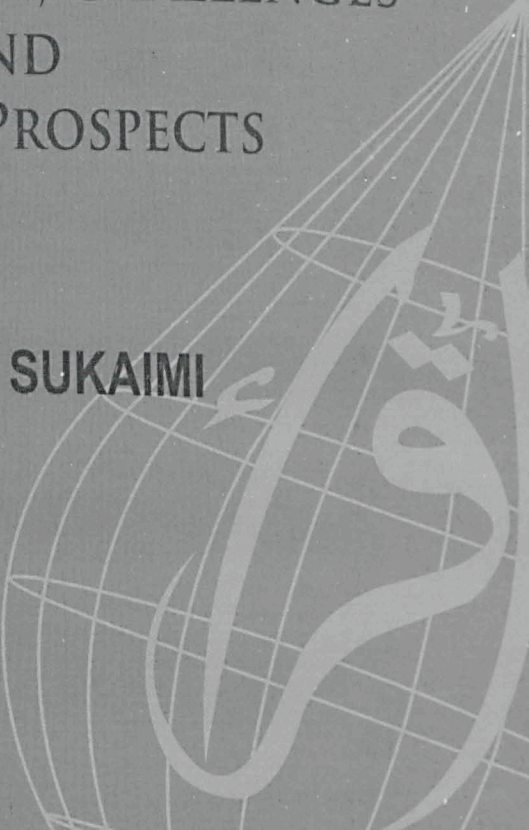


SIRI SYARAHAN PERDANA

MALAYSIAN OIL PALM INDUSTRY

.....
CONTRIBUTION, CHALLENGES
AND
FUTURE PROSPECTS

JALANI SUKAIMI





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ABSTRACT

The modern oil palm industry of the world was sown when the first four oil palm trees in the Far East were planted in Bogor in 1848, i.e., 164 years ago, as ornamental plants. It was from here that oil palm, six decades later, became an estate crop and now gaining prominence as an industrial crop. The impact of the industry is well-documented, giving a socio-economic uplift to the producing countries, especially Malaysia and Indonesia.

The oil yield has improved from an average of 0.18 t/ha in the wild groves of Africa to a national average yield of 4.01 t/ha in Malaysia. There have been continuous yield improvements both in estate yield and experimental yield, by improving the progenies of four Bogor palms as well as by introgressing the progenies of Bogor palms with elite germplasm materials, especially from Africa.

The industry produces two types of oil, i.e., palm oil and palm kernel oil. The main use, almost 90%, of the oil is for food purposes and the other 10% is for non-food purposes (either via direct or olechemical routes). There is a need to improve and diversify both uses to enhance the versatility and competitiveness of the oil.

R & D has been one of the reasons for the success story of the oil palm industry. There have been many improvements, amongst others, in the agronomic practices, yield, control of pests and diseases, increase labour productivity, plantation management, and mill efficiency.

However, the industry faces many issues and challenges, especially in going into this millennium. Yield gaps between national, estate, experimental and theoretical yield are still wide. Level of mechanization is still low and field operation efficiency is still meager compared to annual oil crops. Only 10% (oil) of total dry matter is being utilized annually and only a small portion of other dry matter (lignocelluloses) is being used economically. Some producing countries have acute labour and land shortages, raising cost of production, inefficient smallholdings and competition from other oils and fats. The industry is also facing many barriers, both trade and non-trade, especially from the environmental groups. There is a need for the industry to continue its eco-friendly and practice sustainable agriculture activities.

R & D would play an important role in finding solutions to these issues and challenges. There is a need for both step-wise and quantum leap technologies to propel the industry into next half of this millennium. There will be many breakthroughs, either through adaptation, adoption or innovation of technologies. There will be a greater need for technologies transfer and commercialisation of these technologies. With the increase in world population, increase in affluence or improving incomes, growing economies, urbanization, and other demands, palm oil will continue to play a vital role in the world of oils and fats. Oil palm will therefore, continue as a golden crop.

ABSTRAK

Industri sawit moden telah disemai di Timur Jauh apabila empat pokok sawit ditanam di Bogor pada tahun 1848, iaitu 164 tahun dahulu, sebagai pokok hiasan. Ianya menjadi tanaman estet enam dekad kemudian, dan kini berkembang menjadi tanaman industri yang amat menguntungkan. Impak industri sawit kepada peningkatan sosioekonomi negara pengeluar, terutamanya Malaysia dan Indonesia, telah banyak didokumentasikan.

Hasil minyak telah meningkat dari purata 0.18 t/ha dari pokok/tanaman liar di Afrika kepada purata hasil nasional 4.01 t/ha di Malaysia. Peningkatan masih berterusan sama ada hasil estet atau hasil eksperimen dengan pembaikan progeni empat pokok Bogor itu sendiri serta juga dengan mengintegresikan germplasma elit, terutamanya dari Afrika, dengan progeni Bogor.

Industri ini menghasilkan dua jenis minyak, iaitu minyak sawit dan minyak isirong. Kegunaan utama, hampir 90%, untuk bahan makanan dan 10% lagi untuk bahan bukan-makanan, sama ada melalui laluan langsung atau oleokimia. Ada keperluan untuk memperbaiki dan juga mempelbagaikan kegunaan bagi meningkatkan versitiliti dan persaingan minyak ini.

P & P adalah satu daripada sebab yang menjayakan industri sawit ini. Banyak penambahbaikan, terutamanya amalan agronomi, hasil, kawalan perosak dan penyakit, peningkatan produktiviti pekerja, pengurusan dan efisiensi pengilangan.

Walau bagaimanapun, industri ini menghadapi pelbagai isu dan cabaran, terutamanya dalam alaf ini. Jurang di antara hasil nasional, estet dan eksperimen masih luas. Aras mekanisasi masih rendah dan

efisiensi operasi ladang masih rendah berbanding dengan tanaman bijirin minyak seperti kacang soya dan sebagainya. Hanya 10% (minyak) daripada jumlah jisim kering yang digunakan per tahun dan sebahagian kecil lagi (lignoselulos) daripada jisim kering itu digunakan secara ekonomi. Sesetengah negara pengeluar menghadapi kekurangan tenaga pekerja dan juga tanah, peningkatan kos pengeluaran, ladang kecil yang tidak efisien serta persaingan dengan minyak dan lemak yang lain. Industri ini juga menghadapi pelbagai halangan, kedua-dua perdagangan dan bukan-perdagangan, terutamanya dari organisasi bukan-kerajaan yang berpaksikan persekitaran. Oleh itu, industri ini perlu meneruskan aktiviti mesra-eko dan amalan pertanian lestari.

P & P boleh memainkan peranan penting untuk mencari penyelesaian kepada pelbagai isu dan cabaran itu. Maka industri ini memerlukan kedua-dua teknologi langkah-demi-langkah dan lonjakan teknologi tinggi ke dalam separuh alaf akan datang. Industri ini juga memerlukan peningkatan dalam pemindahan teknologi dan pengkomersialan teknologi itu.

Dengan peningkatan penduduk dunia, peningkatan kemewahan atau pendapatan, pertumbuhan ekonomi, pertumbuhan perbandaran dan juga permintaan lain, minyak sawit akan terus mempunyai peranan utama dalam dunia minyak dan lemak. Oleh itu, minyak sawit akan terus menjadi tanaman emas.

ملخص البحث

وقد زُرعت صناعة زيت النخيل الحديثة عندما زُرعت أول أربع شجرات زيت النخيل في الشرق الأقصى في بوجور عام ١٨٤٨ م - بعدما مضت ١٦٤ سنة - بوصفها نباتات الزينة. أصبح زيت النخيل من هنا إلى بعد ستة عقود من محصولات الدولة، والآن يكتسب الأهمية بصفه محصولاً صناعياً. التأثير على تلك الصناعة هو أمر موثق جداً، إنها تؤدي إلى ارتفاع الاجتماعية الاقتصادية في الدول المنتجة، خصوصاً ماليزيا واندونيسيا. وقد تحسنت عائدات النفط من متوسط بقدر ٠.١٨ طن / هكتار في بساتين البرية الأفريقية إلى متوسط عائدات العقار ٤.٠١ طن / هكتار في ماليزيا. كان هناك تحسن مستمر في محصولات المزرعية والنتائج التجريبية، من خلال تحسين السلالات من أربع أشجار النخيل في بوجور.

تنتج تلك الصناعة نوعين من النفط؛ زيت النخيل وزيت لب النخيل. ويكون الاستخدام الرئيس للأغراض الغذائية – ما يقرب من ٩٠٪، من النفط –، والأخرى ١٠٪ للأغراض غير الغذائية. وهناك حاجة ملحة إلى تحسين الاستخدامين كليهما وتنويعهما لتعزيز التنوع والقدرة التنافسية للنفط.

أصبح البحث والتطوير من أحد الأسباب التي أدت إلى نجاح الصناعة لزيت النخيل. كانت هناك عديد من التحسينات من بين أمور أخرى، في الممارسات الزراعية، والغلة، والسيطرة على الآفات والأمراض، وزيادة الإنتاجية العمالية، وإدارة المزارع، وكفاءة المصانع.

فجوات الإنتاجات بين الوطنية والعقارات، والتجريبية والنظرية لا تزال واسعة، إضافة إلى أن تواجه الصناعة كثيراً من القضايا والتحديات، خاصة في مواجهة هذه الألفية. ولا يزال مستوى الميكنة منخفضاً حيثما لا تزال كفاءة العمليات الميدانية هزيلة مقارنة بالمحصولات الزيتية السنوية. وتستخدم فقط ١٠٪ من النفط من المكونات الجافة سنوياً، ويستخدم جزء صغير من المكونات الجافة الأخرى من الناحية الاقتصادية. بعض الدول المنتجة لها عمالة حادة ونقص الأراضي، وارتفاع تكلفة الإنتاج، الحيازات الصغيرة غير الفعالة، والمنافسة من الزيوت والدهون والأخرى. تواجه الصناعة أيضاً العديد من الحواجز، سواء أكانت التجارية وغير التجارية، وخاصة من جماعات حماية البيئة. ولتلك الصناعة هناك حاجة لمواصلة علاقاتها الصديقة للبيئة، وممارسة أنشطة الزراعة المستدامة.

يؤدي البحث والتطوير دوراً هاماً في إيجاد حلول لهذه القضايا والتحديات. هناك حاجة لكلا التقنيتين؛ خطوة التكنولوجيات الحكيمة وتقنيات النقلة نوعية، لدفع هذه الصناعة في النصف الثاني من هذه الألفية. ستكون هناك اختراقات كثيرة، سواء من خلال تكيف التكنولوجيات، أو ابتكارها. سيكون هناك مزيد من الحاجة لنقل التكنولوجيا والاستغلال التجاري لهذه التقنيات. ومع زيادة عدد السكان في العالم، وزيادة الدخل أو تحسين الرفاهية، ونمو الاقتصادات، والتحضر، ومطالب أخرى، يؤدي زيت النخيل دوراً هاماً في العالم في الزيوت والدهون باستمرار. ولذلك لا يزال زيت النخيل يصبح محصولاً ذهبياً.

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MALAYSIAN OIL PALM INDUSTRY

CONTRIBUTION, CHALLENGES AND FUTURE PROSPECTS

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