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Report Name: Clarifying Japanese Imports of Palm Kernel Residues

Country: Japan

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Report Category: Oilseeds and Products, Biofuels

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Report Highlights:

Japan's palm kernel shell (PKS) imports have dramatically increased since 2012, when biomass-generated power became eligible for a feed-in-tariff program (FIT). In 2019, Japan imported approximately 2.5 million metric tons of PKS and other palm residues, which were almost entirely consumed by medium and large FIT-eligible biomass power plants. Japan's use of palm kernel meal for feed was minimal.

Palm Kernel Meal (PKM) and Palm Kernel Shell (PKS)

The oil palm (*Elaeis guineensis*) yields two distinct highly saturated vegetable oils: crude palm oil (CPO) derived from the outer parts of the fruit, and palm kernel oil (PKO) derived from the kernel. Malaysia and Indonesia are the top global producers and exporters of oil palm products.

The shell fractions left behind after the removal of the oil palm nut for crushing become palm kernel shell (PKS). Along with empty fruit bunch (EFB), palm press fiber and palm trunk, PKS exports from Malaysia and Indonesia are utilized as feedstock by Japanese biomass power plants.

On the other hand, palm kernel meal (PKM), the main by-product of the PKO extraction process, is best suited for feed for ruminants and rabbits. It is characterized by high fiber and medium protein content. Industry sources indicate that PKM is a rarely used feed ingredient in Japan ([JA2020-0067](#)).

Trade data

Presently, two subheadings of the harmonized system (HS) codes are used to represent PKS trade with Japan: (i) HS 2306.60 (palm nut or kernel oilcake and other solid residues resulting from the extraction of palm nuts or kernels) and (ii) HS 1404.90 (vegetable products not elsewhere specified or included). A further challenge is the use of different nine- or ten-digit country-specific statistical HS codes by Japan and exporting countries (i.e. Malaysia and Indonesia) (Table 1).

Table 1. Summary of HS codes for Palm Kernel-derived Residues

HS Code	In use	Description	Category
Japanese Imports			
1404.90.200	no change	Nuts including their shells, whether or not ground	Nut shells (e.g., PKS, EFB)
2306.60.000	no change	Oil-cake and other solid residues, of palm nuts or kernels	Palm residues (e.g., PKS, EFB, PKM)
Exports to Japan			
<i>Nut Shells from Malaysia</i>			
1404.90.0000	until March 2017	Vegetable products not elsewhere specified or included. Other than cotton lintens.	Nut shells (e.g., PKS, EFB)
1404.90.9100	since April 2017	Vegetable products not elsewhere specified or included. Palm kernel shells	PKS
1404.90.9200	since April 2017	Vegetable products not elsewhere specified or included. Empty fruit bunch of oil palm	EFB

<i>Nut Shells from Indonesia</i>			
1404.90.9000	until February 2017	Other vegetable products not used primarily in tanning or dyeing, not elsewhere specified	Nut shells (e.g., PKS, EFB)
1404.90.9100	since March 2017	Palm kernel shells	PKS
1404.90.9200	since March 2017	Empty fruit bunch of oil palm	EFB
<i>Palm Residues from Malaysia</i>			
2306.60.0000	until March 2017	Of palm nuts or kernels	Palm residues
2306.60.1000	since April 2017	Oil-cake and other solid residues, of palm nuts or kernels: Ground or in the form of pellets	Palm residues ground or pelleted (i.e., PKM)
2306.60.9000	since April 2017	Oil-cake and other solid residues, of palm nuts or kernels: Other than ground or in the form of pellets	Other palm residues (e.g., PKS, PKM)
<i>Palm Residues from Indonesia</i>			
2306.60.0000	until February 2017	Oil-cake and other solid residues of palm nuts or kernels	Palm residues
2306.60.1000	since March 2017	Palm nuts or kernels, ground or in the form of pellets	Palm residues ground or pelleted (i.e., PKM)
2306.60.9000	since March 2017	Palm nuts or kernels, other than ground or in the form of pellets	Other palm residues (e.g., PKS, PKM)

According to Japanese biomass experts, Japan Customs and traders tend to classify PKS under HS 2306.60.000. Aside from a small volume of PKM imported for feed ([JA2020-0067](#)) typically under the same HS code as PKS, biomass power plants consume virtually all of these palm kernel residue imports ([JA2019-0183](#)).

Malaysia, which supplied approximately 30 percent of Japan's palm kernel residue demand in 2019, has four HS codes since April 2017 for these products (Table 1). Industry sources indicate that Japanese trading houses tend to assign HS codes somewhat arbitrarily when they export PKS from Malaysia. For detailed information of Malaysian oilseeds, meal and oil products, see [MY2020-0002](#).

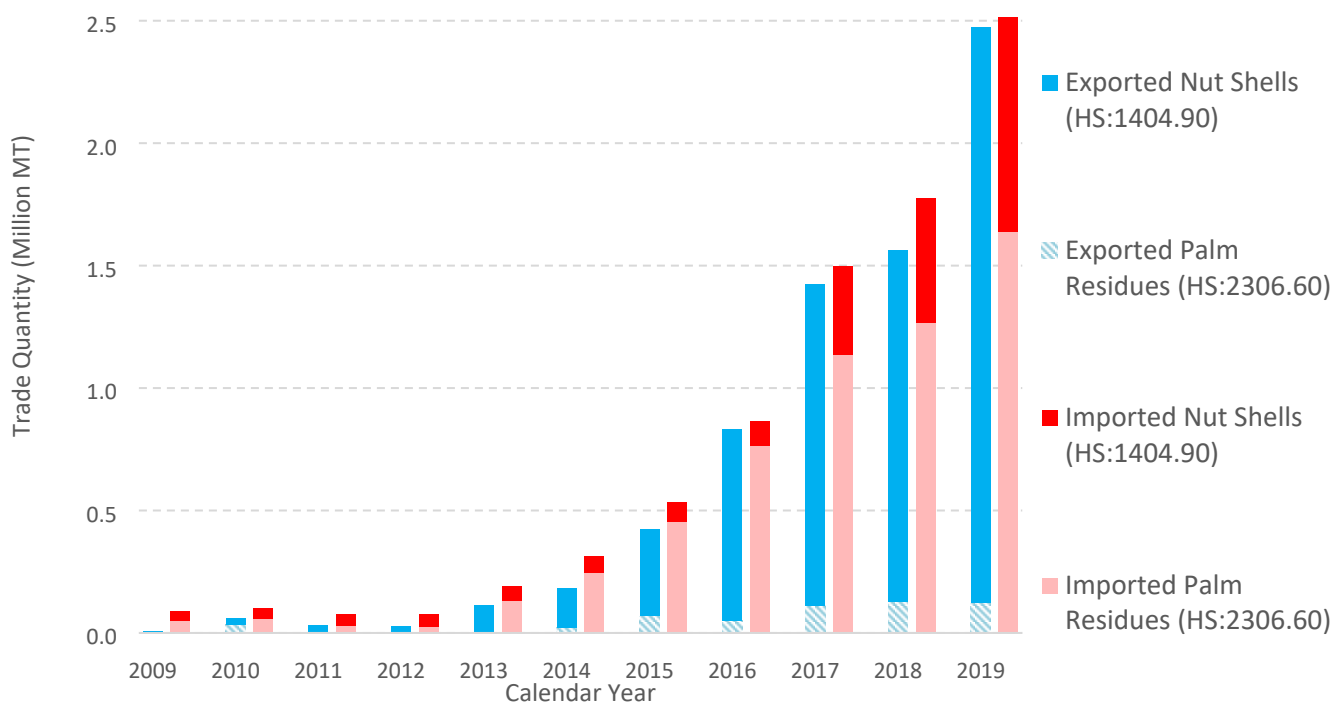
Indonesia, which meets approximately 70 percent of Japan's palm kernel residue demand, since March 2017 utilizes the same four HS codes as Malaysia. Japanese biomass experts consider Indonesia's trade

data on palm kernel products quite reliable due to Indonesia’s imposition of a levy on CPO and PKS exports ([ID1520](#)). For detailed information of Indonesian oilseeds, meal and oil products, see [ID2020-0004](#).

According to 2019 export statistics of Malaysia and Indonesia, Japan received only 301 metric tons (MT) of PKM for feed (HS 2306.60.1000). On the other hand, in 2019, Malaysia and Indonesia exported 121,704 MT of palm residues to Japan under HS 2306.60.9000 primarily for biomass-based power generation.

In light of the different HS codes used by Japan and its palm kernel residue suppliers, reliance on a single nine- and ten-digit HS statistical code for both export and import data yields substantial differences between Japan’s import and Malaysia and Indonesia’s export data (Figure 1). By combining trade data across HS 2306.60 and HS 1404.90 subheadings, these differences largely disappear.

Figure 1. Comparison of Palm Kernel Residue Data between Exporters and Japan



Source: Trade Data Monitor

Note: Export data is based on export statistics reported by Malaysia and Indonesia

PKS Utilization in Japan

Since 2012, Japan's palm kernel residue imports have been growing exponentially (Figure 1) as Japan incorporated biomass power generation into its feed-in tariff (FIT) program ([JA2019-0183](#)). Industry experts project PKS imports to reach approximately five million metric tons (MMT) by 2025 as the number of Japanese biomass power plants increases and requires reliable and inexpensive feedstock.

Under the [current FIT program](#), consumers pay 32-40 yen per kilowatt hour (kWh) (\approx \$0.30-0.36/kWh) for woody biomass derived from domestic forest thinnings and 21-24 yen/kWh (\approx \$.19-.22/kWh) for other woody biomass sources, such as imported wood pellets and PKS. Large independent biomass power plants can utilize all types of biomass, including PKS, which is the most cost-effective biomass feedstock in terms of energy content¹. By September 2019 ([latest available data in Japanese](#)), Japan has approved proposals for biomass power plants with a pooled power generation capacity of 8.5 gigawatts (GW), though the operational capacity of existing power plants stood at 1.9 GW. A lack of a steady biomass supply is the key limiting factor in Japan's efforts to increase its use of biomass for energy generation.

Japan's Ministry of Economy, Trade and Industry (METI) oversees and regularly reviews the FIT program. In 2019, METI invited energy and environmental experts to evaluate environmental standards for palm oil and PKS imports. In the resulting [interim report](#) (in Japanese) released on November 18, 2019, the expert panel recommended tightening environmental and social standards for PKS and palm oil imports.

Presently, environmental certification programs do not extend to PKS. Industry sources suggest that Malaysian Sustainable Palm Oil (MSPO) certification scheme will soon begin to cover PKS. Although Indonesian Sustainable Palm Oil (ISPO) certification does not cover PKS, European certification programs, such as the Round Table for Sustainable Biomass (RSB), the International Sustainability and Carbon Certification (ISCC), and the Green Gold Label (GGL), indicated their intention to certify PKS. METI will likely accept these environmental certification schemes and recognize certified PKS as FIT-eligible.

Attachments:

No Attachments.

¹ According to a [2017 Ministry of Economy, Trade and Industry report](#) (in Japanese only), power generation cost of PKS was 703 yen/gigajoule (GJ) and of imported wood pellet was 1,063 yen /GJ in 2017.