

Palm Based Animal Feed Products

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INSIGHTS THAT WORK

Presentation Outline

1. Palm Oil Supply Chain
2. Palm Oil products for Animal Nutrition
3. Global Meat Consumption data
4. Per Capita Fresh Dairy Products Consumption data
5. Estimated Animal Feed Fat potential for Palm Oil based products
6. Types of Palm Oil Based Animal Feed
7. Advantages of Palm Based Feed Fats
8. Research evidence for Palm Based Fats
9. Phyto-Nutrient Rich Palm Based Fats
10. Our Distributor in Iran
11. Conclusion

Palm Oil Supply Chain

Palm Oil Supply Chain



PALM OIL PLANTATION

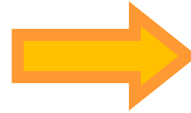


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Palm Oil Supply Chain

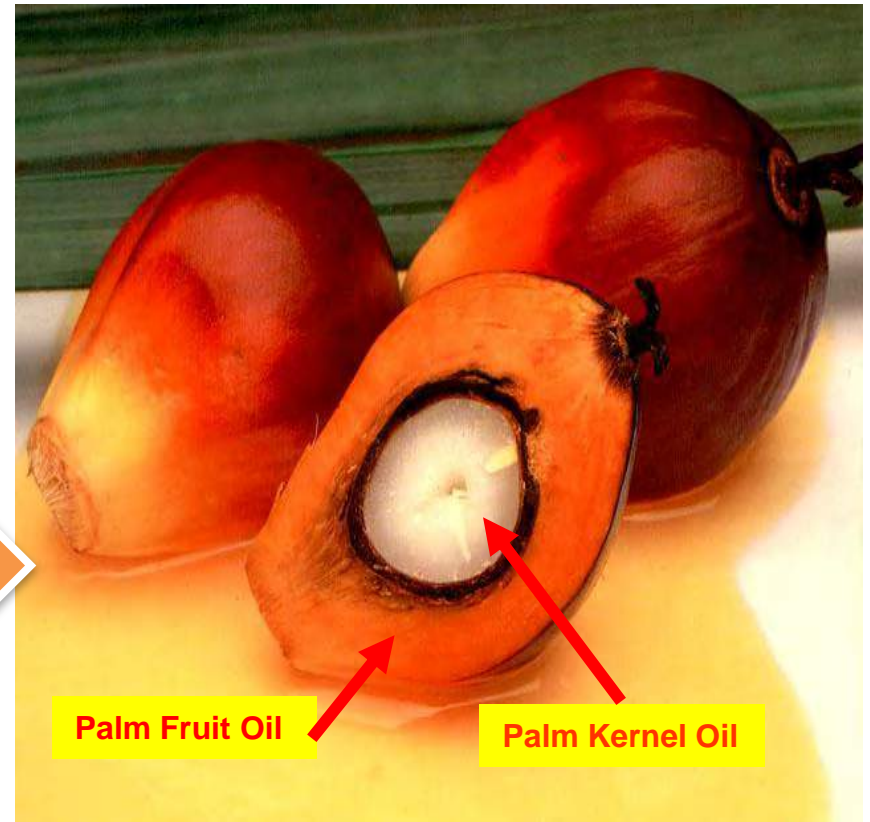


PALM OIL TREE

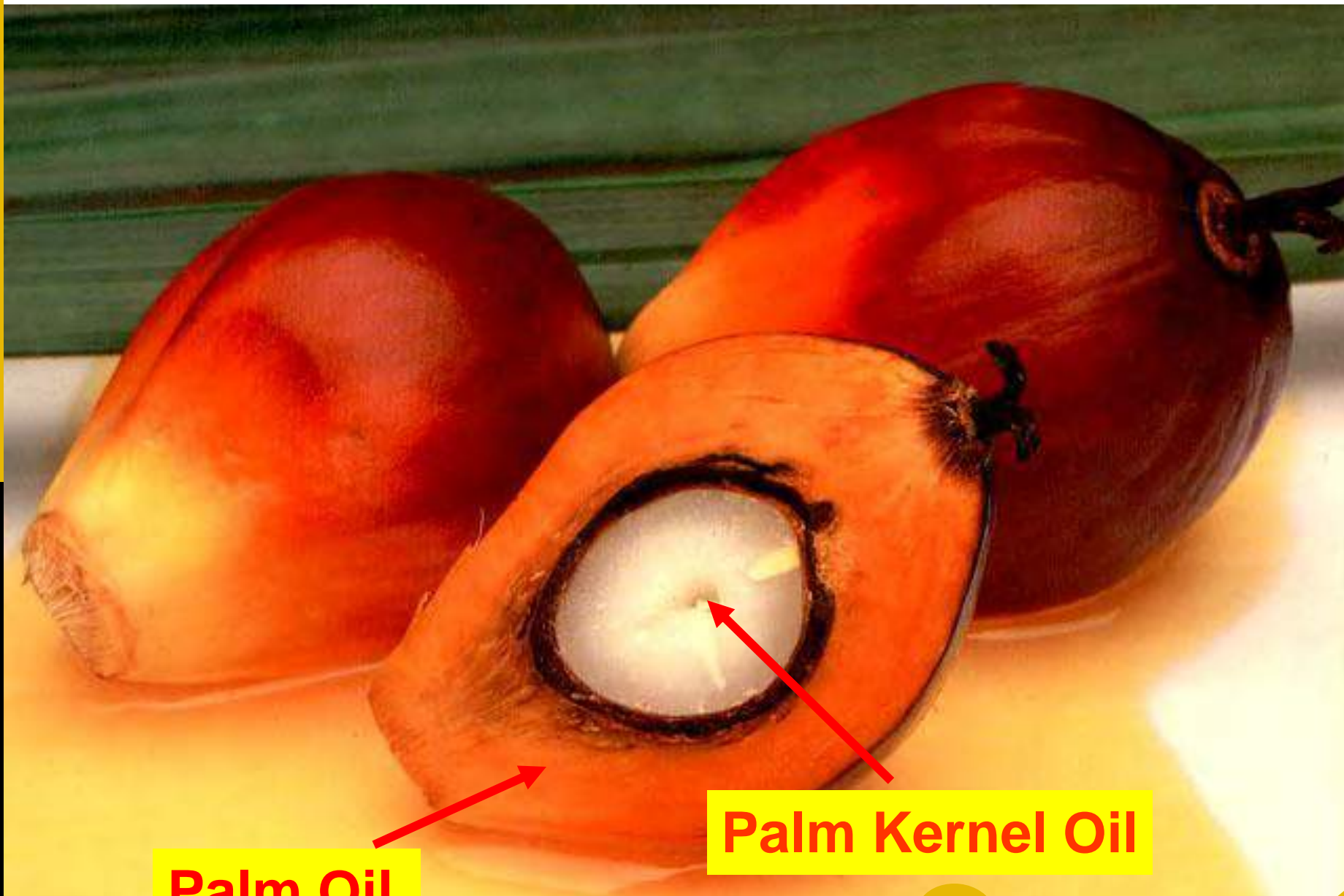


**FRESH FRUIT BUNCH
(FFB)**

Fresh Fruit Bunch & Palm Fruit



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Palm Oil

Palm Kernel Oil

Background

■ World population

- > 8.5 bn by 2030, 9.7 bn by 2050
- > 1.0 bn undernourished
- Animal product consumption will double within 20 years

■ World wide animal production:

- 16% human food energy
- 33% human food protein
- Cattle (dairy and beef), pigs, poultry, sheep and goats
- Ruminant and non-ruminant animals

Source: United Nations

LIVESTOCK/ANIMAL PRODUCTION

Non-Ruminants (Monogastric)



FISH

MEAT
OIL



POULTRY

MEAT



SWINE

MEAT



Ruminants



CATTLE

MILK BEEF
(Dairy) (Meat)



SHEEP/GOAT

MILK
MEAT



CAMEL

MEAT
MILK

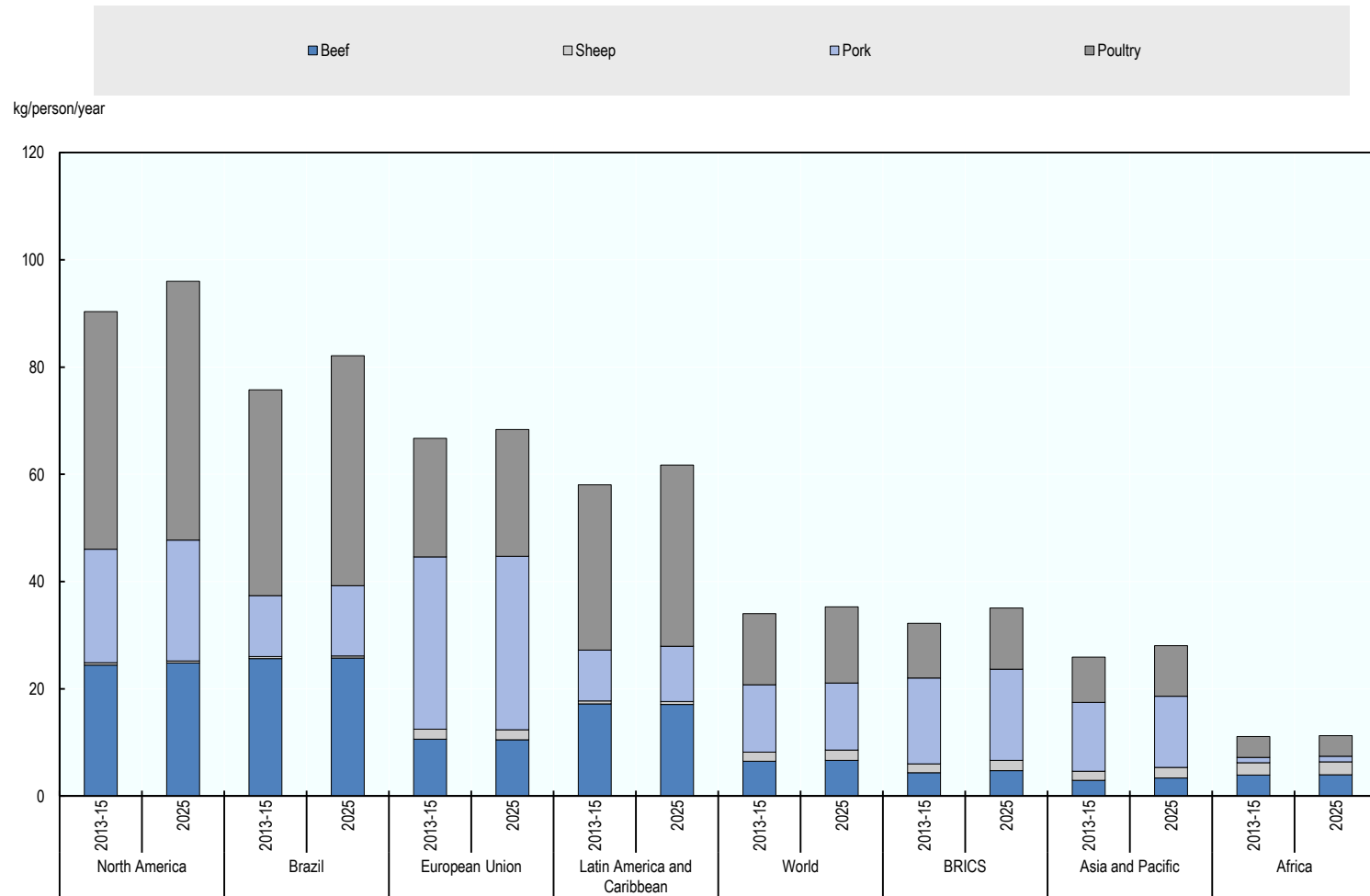
TODAY'S CONSUMERS

- Health Conscious
- “Scared” by food safety issues
- Wanting more animal protein



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Global Meat Consumption



Source: OECD FAO Agricultural Outlook

Livestock & Poultry Numbers 2030, Millions

Location	Cattle & Buffaloes	Sheep /Goats	Pigs	Poultry
World	1858	2309	1082	24804
Developing Countries	1522	1856	761	19193
South Asia	424	405	23	2256

Source: OECD FAO Agricultural Outlook

Estimated Animal Feed Fat Potential for Palm oil based products, Million MT by 2030

Item	Cattle	Sheep & Goats	Pigs	Poultry
Concentrate feed per head/year (kg)	2,000	30	200	4
Added fat in diet %	2.0	1.0	3.0	2.0
Total fat (MT,Million) (25% market)	18.58	0.173	1.623	0.496

Source: Extrapolated from OECD FAO Agricultural Outlook

Per Capita Meat Consumption, Kg(2015)

Location	Beef & Veal	Pork	Poultry	Sheep & Goat
USA	24.7	22.7	47.6	0.4
OECD	14.0	23.2	28.6	1.3
EU	10.8	33.0	22.7	1.8
MALAYSIA	5.7	6.2	41.4	0.8
IRAN	2.9	0.0	23.1	3.2
INDIA	0.5	0.2	1.7	0.5
WORLD	6.4	12.5	13.5	1.7

Source: OECD FAO Agricultural Outlook

Per Capita Fresh Dairy Products Consumption, Kg

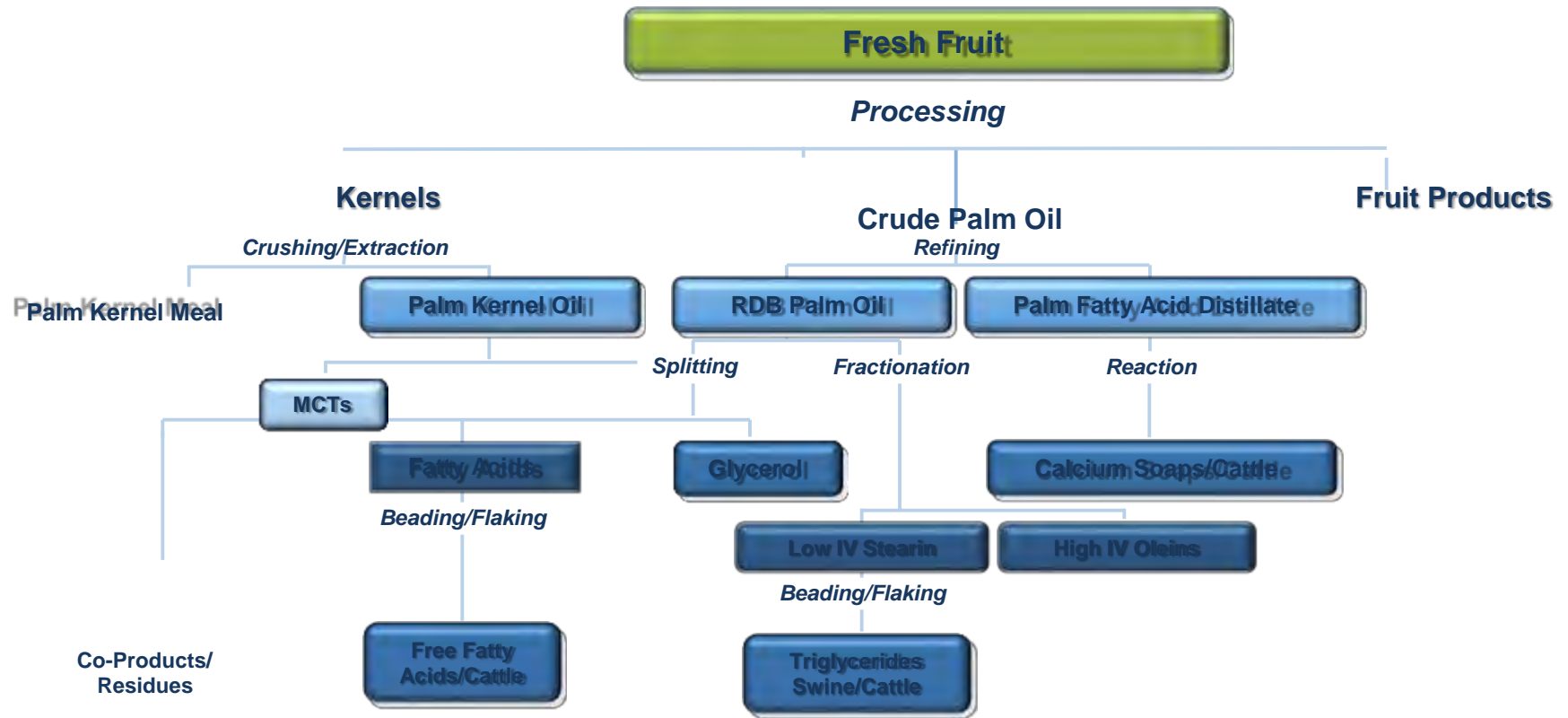
Location	2016	2020
USA	76.53	74.13
OECD	82.85	83.00
EU	92.29	92.88
IRAN	40.03	40.45
INDIA	142.82	158.80
WORLD	75.76	79.74

Source: OECD FAO Agricultural Outlook



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Palm Oil Products for Animal Nutrition



Types of Palm Oil Based Animal Feed Products

1. Triglyceride Based Feed Fats
2. Fatty Acid Based Feed Fats
3. Calcium soap of Fatty Acids
4. Phyto-nutrient rich Fats



Types of Palm Based Animal Feed Fats

**ANIMAL FEED /
CALCIUM SOAP-
AFB 100**



**ANIMAL FEED-
AFW 100**



AFA 100



CAF1000



CAF100



Triglyceride Based Feed Fats(AFW 100)

1. Produced from low IV Hard Stearin(IV15)
2. High Energy Level
3. 100% vegetable origin
4. High content of Palmitic Acid
5. No Trans Fatty Acids

Triglyceride Based Feed Fat(AFW 100)

Specification

Total Fat Content in %	min. 99
Moisture/ Impurities in %	max. 1
Unsaponifiable matter in %	max. 2.5
Melting Point in °C	56 - 60
Iodine Value in g/ 100 g	13 - 19
FFA	max. 10
Energy Content in MJ/NEL/kg	approx. 26
Gross Energy	9000 Kcal/kg
Colour in Lovibond 5/14	max. 4R/ 40Y

Typical Fatty Acid Composition in %

C 14:0 Myristic acid and below	max. 1.5
C 16:0 Palmitic acid	min. 75
C 16:0 Palmitic + 18.0 Stearic Acid	min. 80
C 18:1 Oleic Acid	9 - 16
C 18: 2 Linoleic Acid	2 - 5
C 20:0 Archidic Acid and Above	max. 1



Calcium Soap Based Feed Fat(AFB 100)

1. Produced by saponification of PFAD.
2. 100% vegetable origin
3. Free from GMO
4. No Trans Fatty Acids
5. Suggested dosage 3-5% in compound feeds

Calcium Soap Based Feed Fat(AFB 100)

Specification

Fat Content in %	82.5% min
Moisture in %	5.0% max
Calcium Content in %	8.5% min
Odour	Bland
Colour	Light Brown

Typical Fatty Acid Composition %

C12:0	0.2
C14:0	1.2
C16:0	47.0
C18:0	5.0
C18:1	38.0
C18:2	8.0

Fatty Acid Based Feed Fats(AFA 100)

1. Produced from Fractionated RBD Palm Stearin Fatty Acids
2. 85% min Palmitic Acid
3. 100% vegetable origin
4. No Trans Fatty Acids

Fatty Acid Based Feed Fat(AFA 100)

Specification

Total Fat Content in %	min. 99
Moisture/ Impurities in %	max. 1
Unsaponifiable matter in %	max. 2.0
Melting Point in °C	56 min
Iodine Value in g/ 100 g	10 Max
FFA in %	99 Min
Energy Content in NEL(MJ/KG)	approx. 26
Gross Energy	9000 Kcal/kg
Colour in Lovibond 5/14	max. 3R/ 40Y

Typical Fatty Acid Composition in %

C 14:0 Myristic acid and below	max. 1.5
C 16:0 Palmitic acid	min. 85
C 18:0 Stearic Acid	max 6.0
C 18: 1 & above	max 12.0



Phyto-Nutrient Rich Palm Based Fats

Phyto-Nutrient Rich Palm Based Fats

- New generation Feed fats from Palm Oil that are rich in Natural Carotenoids & Vitamin E(Tocotrienols & Tocopherols)
- Carotenes 100-300 PPM
- Natural Vitamin E 200-1000 PPM
- Improves egg yolk color
- Improves quality & quantity of eggs
- Improves milk yield & milk fat content
- Improves immunity due to presence of natural antioxidants

Advantages of Palm Based Feed Fats

1. AFW 100- Triglyceride Based Feed Fat

In Cattle

- Passes through rumen to to intenstines with no effect on activities of rumen microbes
- Increases daily milk production
- Improves milk fat without affecting protein content of milk

In Poultry

- Improved Feed conversion ratio
- Improves layer performance



Advantages of Palm Based Feed Fats

1. AFB 100- Calcium Soap based Feed Fat

In Dairy Cows

- Ideal Energy dense supplement for lactating and advanced pregnant animals
- Passes through rumen to to intestines with no effect on activities of rumen microbes
- Enhances peak daily milk production and persistency of lactation
- Enhancement of reproductive performance



Advantages of Palm Based Feed Fats

1. AFA100- Fatty Acid based Feed Fat

- Efficient and natural Rumen by pass fat.
- Improves Butter fat content.
- Highest Energy content
- Highest Palmitic Acid content makes it easily digestible and helps increase fat content in milk and milk yield
- Improved Energy Balance improves reproductive performance



Research Evidence on Palm Based Fats

Data for Dairy Cows

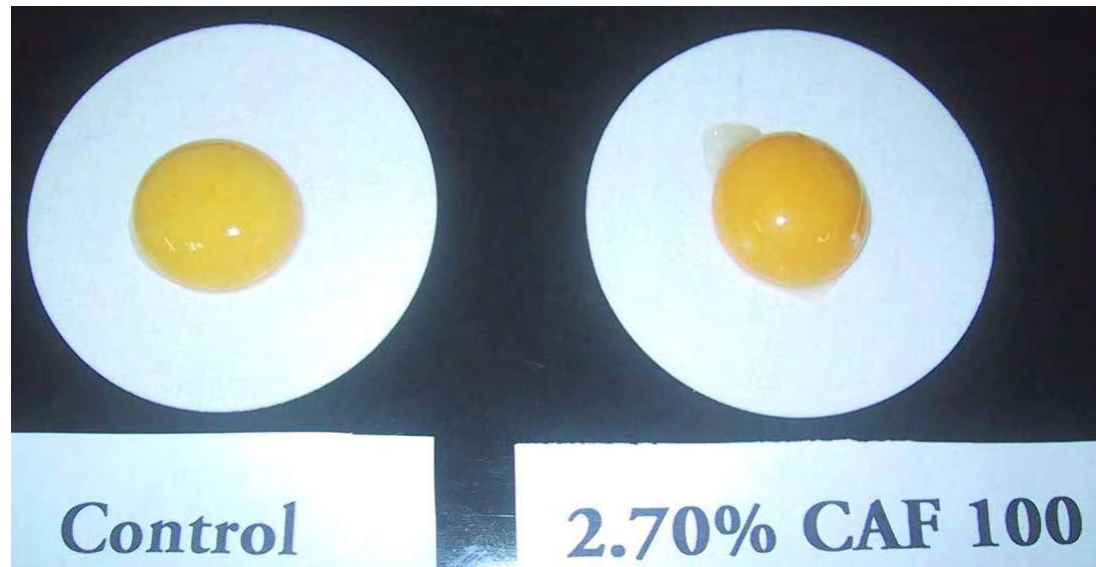
	Calcium Soap of PFAD	High Palmitic Based Saturated Fat Feed	Authors
Milk Production	+0.9 kg per day	+1.8 kg per day	Loften & Cornelius
Milk Composition			Relling & Reynolds (2007)
• Milk Fat	3.87%	4.25%	
• Milk Protein	3.09%	3.34%	

Practical Use of Palm Oil Products

	No FAT	High Palmitic Based Saturated Fat Feed	Authors
• Days Open	148	110	Frajblat & Butler
• Conception Rate	40.7	59.3	Ferguson et al. 1990
Heat Stress			Wang et al. (2009)
• Milk Production	26.4 kg per day	28.4 kg per day	
• Body Temperature	40 C	39 C	
• Milk Fat	3.39%	3.67%	



Egg Yolk colour enhancement with Phyto-nutrient rich Palm based Feed Fat



Our Distributor in Iran

- DRH Group (www.hgroup.co.uk) company Kimiakav Bamdad Co.(www.kimiakav.com)
- Well established player in the Iran feed market
- Supplies 20% of raw materials(corn, soybean etc) in the Iran Feed market
- Well established infra-structure with a very efficient Sales & Support team
- Exclusive Distribution Agreement with Sumwin Malaysia
- Involved in more development work on Phyto-nutrient rich palm based animal fats

Conclusion

- World population and per capita consumption of meat, eggs & milk consumption expected to grow
- Palm based fats have high energy density and are by far the most cost-efficient
- Research data shows significant improvement in milk yield & milk fat content when fed with high Palmitic Palm based fats
- New generation phyto-nutrient rich Palm based fats offers unique health benefits particularly in poultry.
- Well established distribution network for serving the Iranian feed industry



THANK YOU

SUMWIN SOLUTIONS MALAYSIA SDN BHD

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