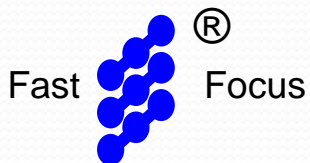


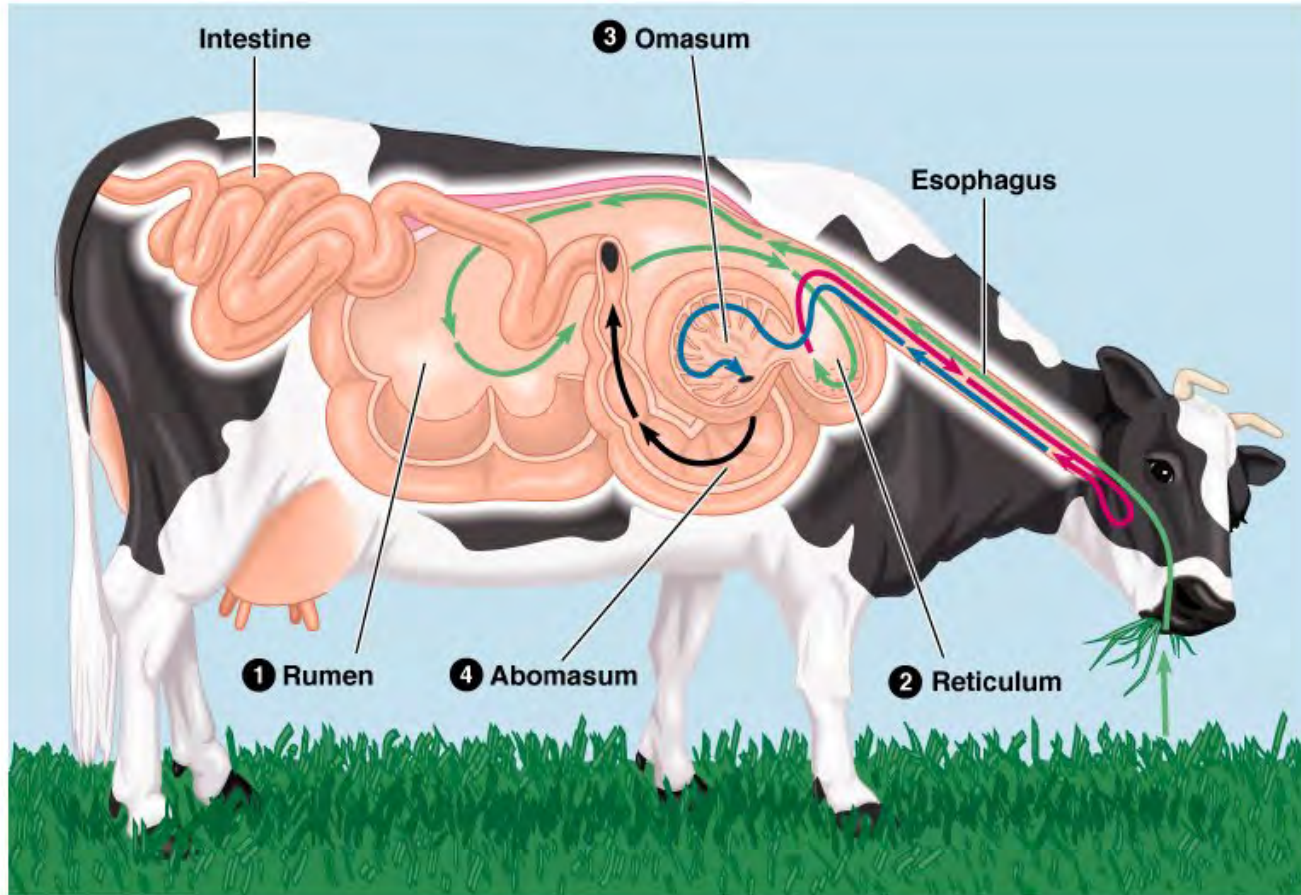
Malaysia Palm Bypass Fat for Increasing Milk Production and Milk Butter Fat on Dairy Cows

BL TAN



ERAFEED SDN. BHD.

Dairy cows have been giving milk to mankind since beginning of history



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Nutrition Facts

Serving Size 1 cup (240 mL)

Servings Per Container 4

Amount Per Serving

Calories 150 Calories from Fat 70

% Daily Value*

Total Fat 8g 12%

Saturated Fat 5g 25%

Trans Fat 0g

Cholesterol 30mg 10%

Sodium 105mg 4%

Total Carbohydrate 12g 4%

Dietary Fiber 0g 0%

Sugars 12g

Protein 8g

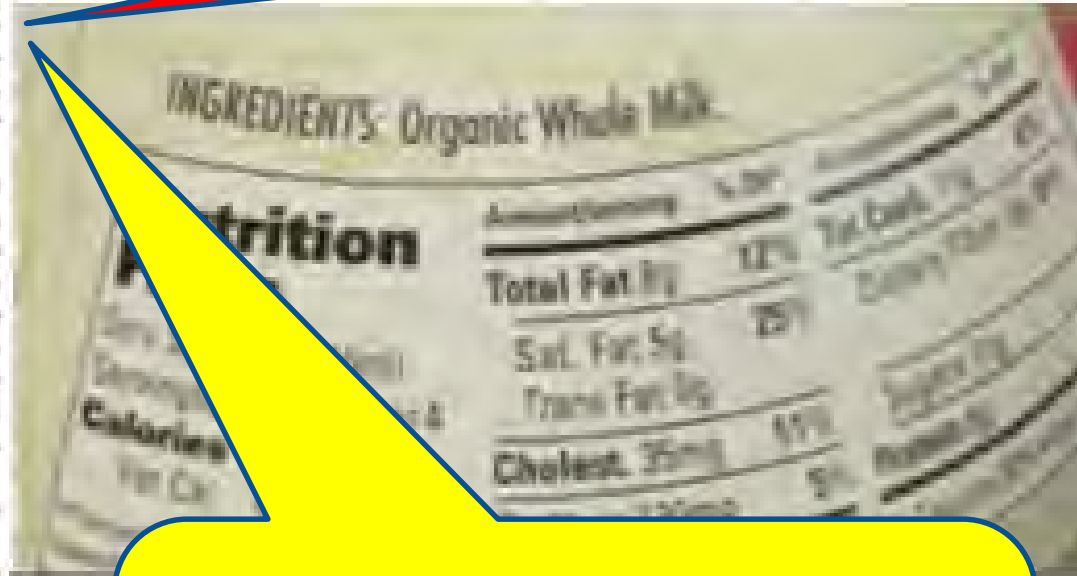
Vitamin A 6% • Vitamin C 0%

Calcium 30% • Iron 6%

*Percent Daily Values are based on a diet of 2,000 calories. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	80g	80g
Saturated Fat	Less than	30%	30%

Milk has 3-6% fat

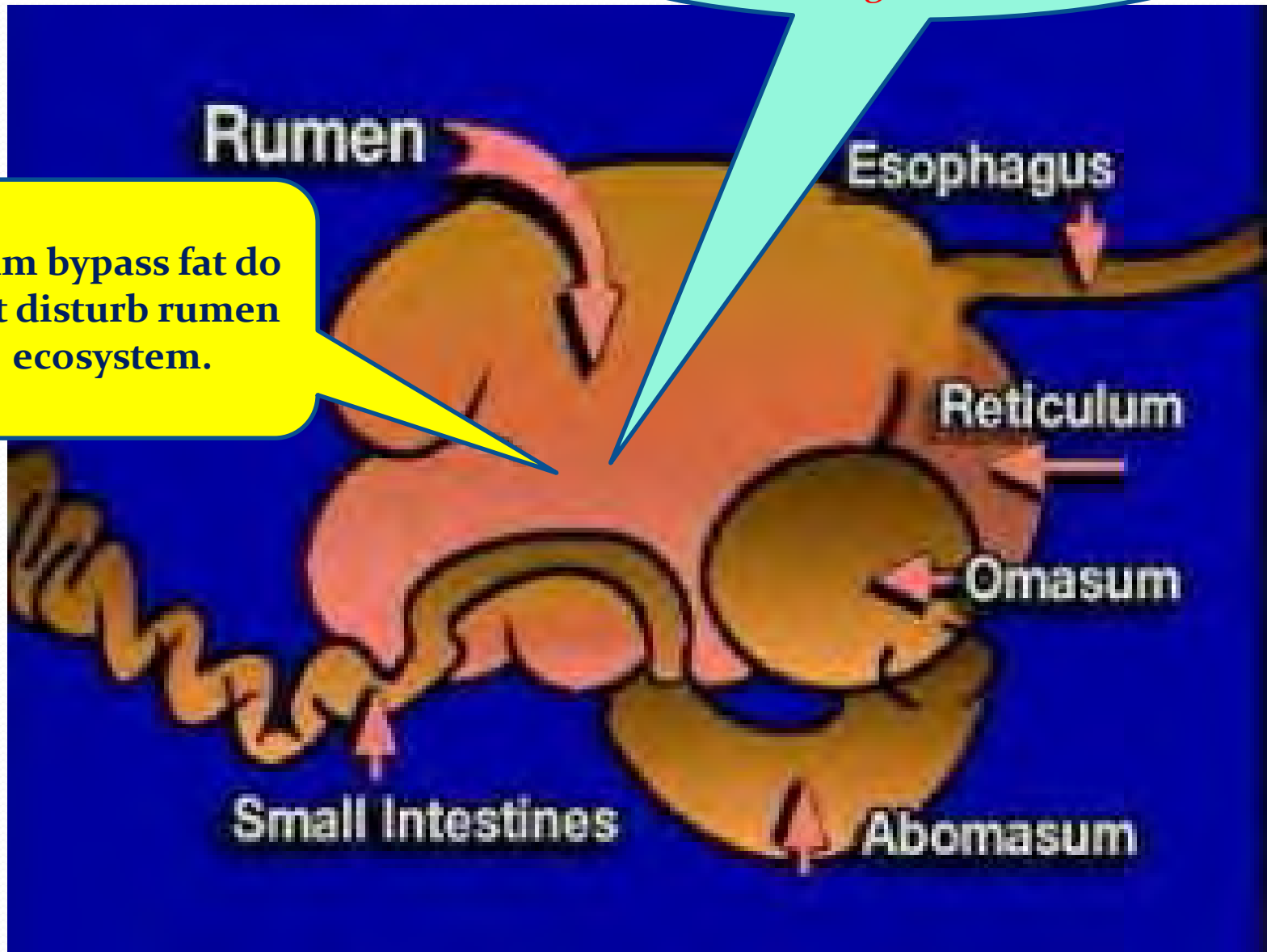


25-50 litres
milk/cow/day (0.75kg-
1.5kg/day fat needed)

Picture of Rumen

Beneficial microbes in cow rumen crucial for fibre digestion

Palm bypass fat do not disturb rumen ecosystem.



ERA FEED PALM BYPASS FAT HAS 3 TYPES

1. EXTIMA 100 PALM POWDER FAT



2. EXTIMA FA1000 PALMITIC ACID

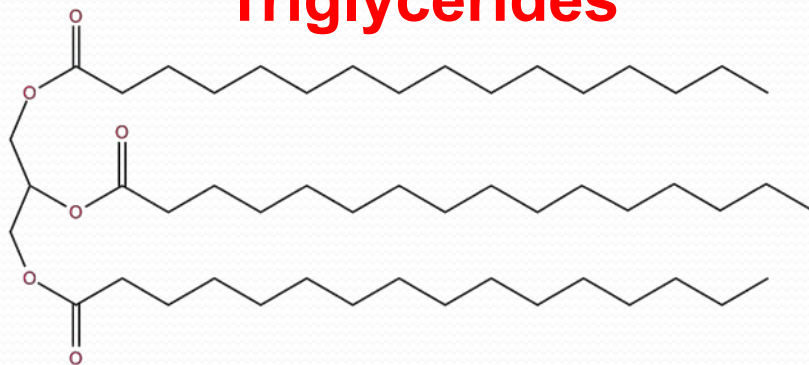


3. EXTIMA STAR Calcium soap



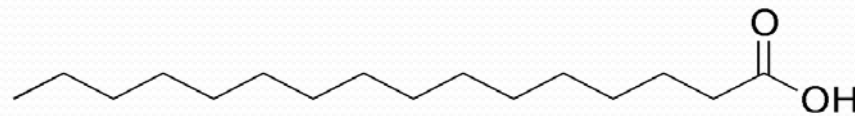
Molecular Structures of Malaysian Palm Bypass Fats

EXTIMA 100 Triglycerides



Palmitic acid around 80%

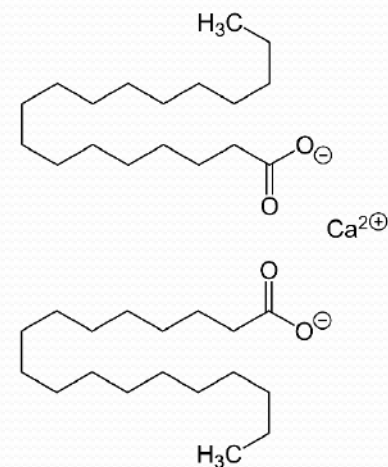
EXTIMA FA1000 Palmitic Acid



Palmitic acid 98%

EXTIMA STAR Calcium soap

Palmitic acid around 44%



Fatty Acids Composition of Malaysian Palm Bypass Fats

TYPES OF BYPASS FAT	PALMITIC ACID (C16: 0)	STEARIC ACID (C18: 0)	OLEIC ACID (C18: 1)	LINOLEIC ACID (C18: 2)
EXTIMA 100 (Triglyceride) (Treatment I)	75%-81%	5%-10%	8%-12%	3%
EXTIMA STAR (Calcium Soap) (Treatment II)	44%	5%	40%	9.50%
EXTIMA FA1000 (Palmitic Acid 98%) (Treatment III)	≥98%	< 1%		

Effect of Malaysia Palm Bypass Fat on Dairy cows Milk Production – 2015 Trial in Beijing

Total heads	Time	Total heads	Average cycle of pregnancy	Average month of lactation	Average daily total milk production	Average milk production per day	Average milk butterfat rate	Average milk protein
Control	1st Nov 2015 to 30th Nov 2015	176	1.8 pregnancy	6 months	5264.16 kg	29.91 kg	3.725%	3.268%
Calcium soap (284 g /cow/day)	1st Dec 2015 to 28th Dec 2015	176	1.8 pregnancy	6 months	5551.04 kg	31.54 kg (+1.63 kg)	3.766% (+0.041%)	3.274% (+0.006%)
EXTIMA 100 palm powder fat (250 g /cow/day)	1st Jan 2016 to 28th Jan 2016	176	1.8 pregnancy	6 months	5,649.60 kg	32.10 kg (+2.19 kg)	3.866% (+0.141%)	3.275% (+0.007%)

The site of field trial was at China Agricultural Mechanization Institute High Yielding Cows Production Centre (中国农机院良种奶牛繁育中心).

Effect of Malaysia Palm Bypass Fat on Dairy cows Milk Production – 2018 trial in Hebei, China

Total heads	Time	Total heads	Average of Milk Production on 10th, 20th & 30th day (kg)
Control	6/7/19 - 5/8/19	16	26.06±2.66a (-0.87 kg)
EXTIMA 100 palm powder fat (240 g /cow/day)	6/7/19 - 5/8/19	16	28.45± 3.03b (+2.72 kg)
Calcium soap (240 g /cow/day)	6/7/19 - 5/8/19	16	27.57± 2.44ab (+1.56 kg)
EXTIMA FA1000 palmitic acid (240 g /cow/day)	6/7/19 - 5/8/19	16	26.79±1.77a (+0.98 kg)

Experiment site: Xianxian Yangxing dairy cattle, in collaboration with Hebei Agricultural University and Malaysia Palm Oil Board Shanghai R&D Center

Different superscript letters in same column indicate that values showed statistically significant difference (P<0.05).

Effect of Malaysia Palm Bypass Fat on Dairy cows Milk Fat Content

Group	Baseline (%)	10 th day(%)	20 th day (%)	30 th day(%)	Average of 10 th , 20 th & 30 th day(%)
Control	4.16 ± 0.51	4.20 ± 0.8 7 ^a	4.22 ± 1.5 7 ^a	2.97 ± 0.9 6 ^a	3.80 ± 0.72
EXTIMA 100 (Palm Powder Fat)	4.20 ± 0.71	4.24 ± 0.8 3 ^a	4.73 ± 1.2 1 ^b	3.00 ± 1.1 6 ^a	3.99 ± 0.89
EXTIMA STAR (Calcium Soap)	4.18 ± 0.35	4.22 ± 0.1 2 ^a	4.03 ± 1.2 5 ^a	2.82 ± 1.4 5 ^a	3.69 ± 0.76
EXTIMA FA1000 (Palmitic Acid 98%)	4.14 ± 0.51	4.87 ± 1.1 7 ^b	4.24 ± 0.8 3 ^a	2.98 ± 1.4 7 ^a	3.80 ± 0.78

Different superscript letters in same column indicate that values showed statistically significant difference (P<0.05).

 Significant difference in 10th & 20th day after feeding.

Effect of Malaysia Palm Bypass Fat on Dairy cows Milk Protein Content

Group	Baseline(%)	10 th day(%)	20 th day (%)	30 th day(%)	Average of 10 th , 20 th & 30 th day(%)
Control	2.84±0.41	2.89±0.39	3.05±0.39	3.09±0.53	3.01±0.11
EXTIMA 100 palm powder fat	2.60±0.15	2.79±0.18	3.38±0.50	2.99±0.66	3.05±0.30
EXTIMA STAR Calcium soap	2.52±0.28	2.67±0.51	3.19±0.48	3.08±0.61	2.98±0.27
EXTIMA FA1000 palmitic acid	2.69±0.35	2.76±0.31	3.20±0.47	3.11±0.86	3.02±0.23

 No significant difference in protein content

Economic benefits of EXTIMA 100 for cows:

Input cost:

By feeding 240 g x 2 EXTIMA 100/cow/day, 1 year using 200 days at price of USD 889/MT CIF HCMC, total cost per cow per year is therefore

$$0.24 \text{ kg} \times 2 \text{ feedings/day} \times \$0.889 \times 200 = \text{USD}85.244/ \text{ year} \\ = 1,982,796\text{VND}/\text{year}$$

Output benefits:

Additional milk output 2.72 kg /cow /day at estimated milk price 11,000 Vietnamese Dong/kg and 200 milk production day per year, additional income is therefore:

$$2.72 \times 11,000 \times 200 = 5,984,000 \text{ Vietnamese Dong}$$

Additional income per cow per year is therefore:

$$5,984,000 - 1,982,796 = 4,001,204 \text{ Vietnamese Dong}$$

(Exchange rate: 23,233 Vietnamese Dong/USD)

Economic benefits of EXTIMA STAR Calcium Soap for cows:

Input cost:

By feeding 240 g x 2 EXTIMA STAR/cow/day, 1 year using 200 days at price of USD 689/MT CIF HCMC, total cost per cow per year is therefore

$0.24 \text{ kg} \times 2 \text{ feedings/day} \times \$0.689 \times 200 = \text{USD}66.144 / \text{year}$
 $= 1,536,724 \text{ VND/year}$

Output benefits:

Additional milk output 2.72 kg /cow /day at estimated milk price 11,000 Vietnamese Dong/kg and 200 milk production day per year, additional income is therefore:

$1.56 \times 11,000 \times 200 = 3,432,000 \text{ Vietnamese Dong}$

Additional income per cow per year is therefore:

$3,432,000 - 1,536,724 = 1,895,276 \text{ Vietnamese Dong}$

(Exchange rate: 23,233 Vietnamese Dong/USD)

Economic benefits of EXTIMA FA1000 Palmitic Acid for cows:

Input cost:

By feeding 240 g x 2 EXTIMA FA1000/cow/day, 1 year using 200 days at price of USD 1,019/MT CIF HCMC, total cost per cow per year is therefore

$$0.24 \text{ kg} \times 2 \text{ feedings/day} \times \$1,019 \times 200 = \text{USD}97.824 / \text{year} \\ = 2,272,745 \text{ VND/year}$$

Output benefits:

Additional milk output 0.98 kg /cow /day at estimated milk price 11,000 Vietnamese Dong/kg and 200 milk production day per year, additional income is therefore:

$$0.98 \times 11,000 \times 200 = 2,156,000 \text{ Vietnamese Dong}$$

Additional income per cow per year is therefore:

$$2,272,745 - 2,156,000 = 116,745 \text{ Vietnamese Dong}$$

(Exchange rate: 23,233 Vietnamese Dong/USD)

CONCLUSIONS

- 1) Feeding palm bypass fat significantly increasing cows milk production;
- 2) Palmitic acid 98% significantly increasing milk butter milk on 7th day after feeding; Palm powder fat significantly increasing milk butter milk on 20th day after feeding.
- 3) Economic benefits of feeding palm bypass fat is in following sequent:
Palm powder fat > Calcium soap>Palmitic acid 98%

Erafeed World Market:

North America

- 19) Canada
- 22) USA

Europe

- 2) Greece
- 3) Turkey
- 4) Russia
- 11) Ukraine
- 12) Estonia
- 23) Kazakhstan

West Asia

- 1) Iran
- 18) Jordan

East Asia

- 5) Taiwan
- 6) North Korea
- 13) South Korea
- 17) Japan
- 18) China

South Asia

- 7) Bangladesh
- 14) Pakistan
- 21) Sri Lanka

West Africa

- 9) Nigeria
- 10) Cameroon

South East Asia

- 8) Singapore
- 15) Vietnam
- 16) Thailand
- 20) Brunei



Thank you very much!