

## Comparison with Vita Energy and By-pass fat

Vita Energy is not directly competing with by-pass fat since it has multifunctional property shown as below but, if it needs to consider optimal combination or replacing by-pass fat with Vita Energy FA, you can evaluate some factors as followings;

### 1. Propylene Glycol vs. By-pass fat

Since dairy cattle produce around 20- 30kg milk every day, it needs enough corresponding energy to fulfill production while it must be burden for liver causing liver fatigue or metabolic disorder and thus, stimulating digestion & liver protection should be in essential and Vita Energy should be right choice not only for supplying energy source but also for boosting digestibility, liver function & optimal energy efficiency of feed.

Propylene Glycol (Vita Energy : PG 15%)	By-pass fat
-Liver function & energy efficiency improvement	-Energy supplement
-Breakdown to propionic acid & lactic acid in rumen → generating glucose in liver	-Synthesis of milk fat & body fat
-Preventing Ketosis, Fatty liver -Preventing decrease of body condition score(BCS) by controlling breakdown of body fat	-Stimulating fattening animals, milk production, pregnancy
Optimal time for feeding : -Early lactation period suffering glucose deficiency	Optimal time for feeding : -After 6~8weeks from calving having stagnant breakdown of body fat

- By-pass fats has two kinds of oil;
  - 1) Calcium fat has 70% fat content with high by-pass ratio but, very bad palatability
  - 2) Hydrogenated oil has high content of fat like more than 95% but, by-pass rate is lower than Calcium fat like 80- 90% only and not so good palatability

; Among them, hydrogenated oil is more popular & prevailing than calcium fat in Korea
- ➔ In case of competitive price scheme, feeding Propylene Glycol must be more efficiency & wise choice than By-pass fat, especially early lactating period for high production dairy cattle.

**2. Economical efficiency analysis ( a kind of hypothesis) comparison**

	Calcium soap <sup>1)</sup>	Hydrogenated fat <sup>2)</sup>	Vita Energy-FA <sup>3)</sup>
Price/kg	US\$1.35	US\$1.80	US\$4.45
Feed ration/head	300g	300g	100g
cost/head	US\$0.405	US\$0.54	US\$0.445

As an example based on following cost calculation;

cf 1) based on Calcium soap price at RMB 8.30/kg

2) based on Hydrogenated fat price at RMB 11.00/kg

3) Landing price of Vita Energy-FA in China

: US\$ 2.80, net price x 1.17 (17% VAT) x 1.055 (5.5% import tax) x 1.03 (3% handling charge)  
x 1.25 (25% Company profit) = around US\$ 4.45

**3. Trial protocol for comparison test**

Group	Vita Energy-FA	Vita Energy-FA	Hydrogenated fat
Testing heads	30	30	30
Dosage/ head a day	50g	100g	300g
Testing period	90days	90days	90days

-Sample requirement for Vita Energy-FA (30 head during 90day) : 405kg

**4. Practical testimonial & efficacy reports from farms after feeding Vita Energy**

- 1) Milk production yield is increased by 3~5% & improving lower milk production in summer season
- 2) Dry matter(feed) intake is increased slightly
- 3) Shortening mating time & parity interval improved by around 0.5
- 4) SCC(Somatic Cell Count) are decreased & clinical mastitis are reduced.
- 5) Reducing outbreak of Ketosis remarkably & finding no Alcohol labile milk