



RACTOTIDE 肉多肽

Organic lean meat enhancer
有机瘦肉促进剂



Win Men Biotech SDN. BHD.
雲門生物科技有限公司

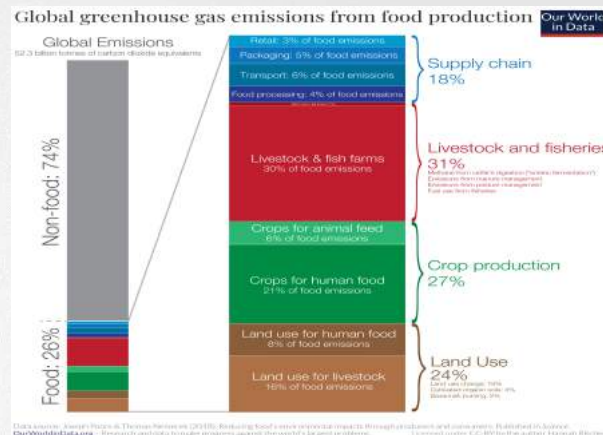
Meat (肉)



Humans have hunted and killed animals for meat since prehistoric times. (自史前时代以来，人类主要以猎杀动物并捕食肉类为生。)



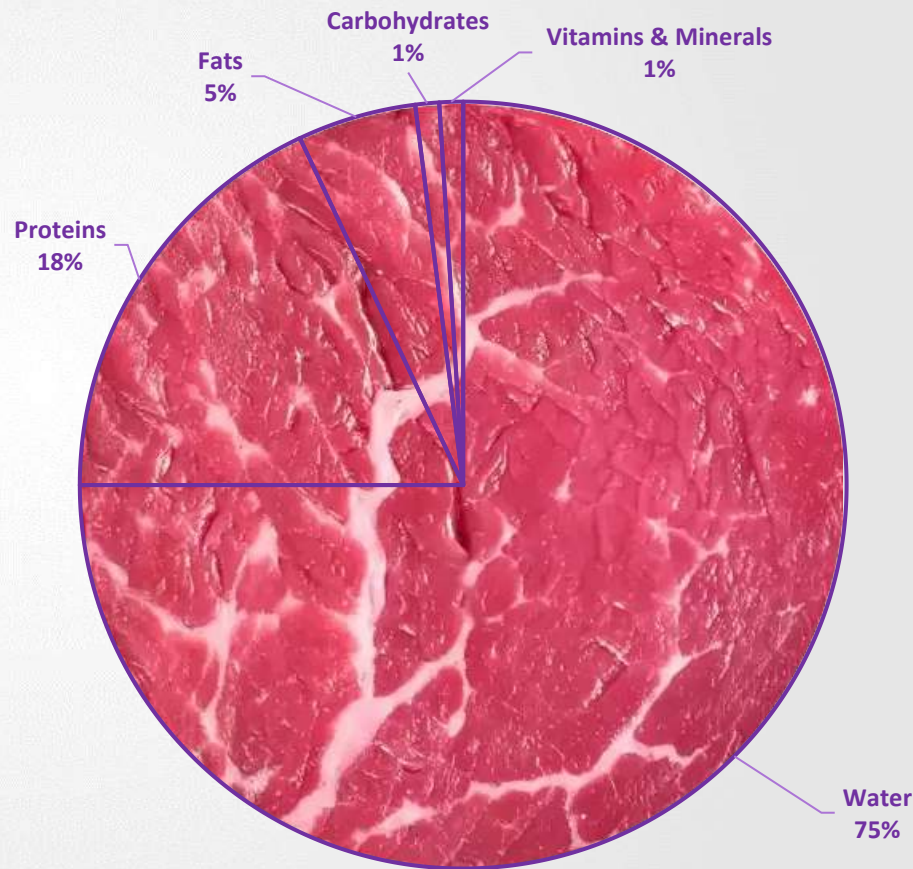
The advent of civilization allowed the domestication of animals and eventually led to meat production on an industrial scale. (文明的出现使人类开始从事农业和畜牧，并把野生动物驯服以供食用。最终导致了工业规模的肉类生产。)



Meat is important in the economy and culture, even though its mass production and consumption have been determined to pose risks for human health and the environment. (随着全球人口不断攀升，人们对肉品的需求势必只增不减，但是饲养动物不只需要大量的资源，对人类健康和环境也会造成影响。)

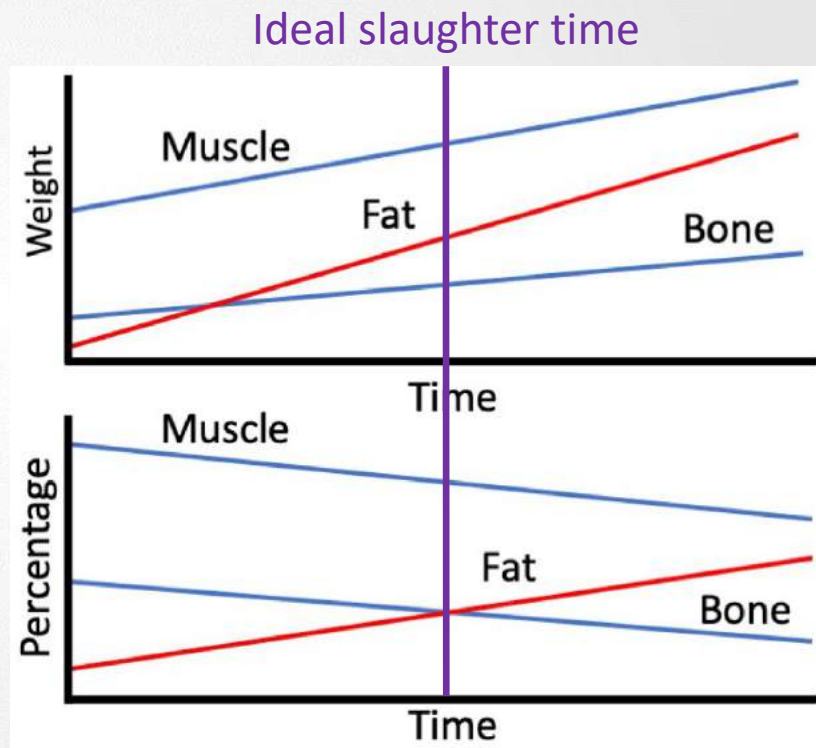
General meat composition (一般的肉成分)

- Meat is mostly the muscle tissue of an animal. Most animal muscle is roughly 75% water, 18% protein, and 5% fat, 1% carbohydrates, and 1% vitamins and minerals. (肉主要是动物的肌肉组织。大多数的动物肌肉中含有大约有75%的水，18%的蛋白质和5%的脂肪，1%的碳水化合物，1%的维生素和矿物质。)



General muscle, bone and fat composition against time (一般的肌肉，骨骼和脂肪成分会随时间而变化)

- The differences in composition are sex and breed dependent due to either hormonal activity or frame size and maturity. (肉品成分上的差异取决于动物的性别和品种（不同的荷尔蒙活性或骨骼大小和成熟度）。)



Priority of nutrient utilization on growth (营养利用优先于生长)

- Priority of nutrient utilization (tissues with the greatest importance to life are first priority) (对生命最重要的细胞组织会优先利用营养):

Tissue (组织)	Body area (身体部位)	Fat depot (脂肪库)
(A) Nervous (神经)	(A) Head (头)	(A) Perinephric (肾周)
(B) Skeletal (骨骼)	(B) Neck and shoulder (脖子和肩膀)	(B) Intermuscular (肌间)
(C) Muscle (肌肉)	(C) Hind limb (后肢)	(C) Subcutaneous (皮下)
(D) Fat (脂肪)	(D) Rib and loin (肋骨和腰部)	(D) Intramuscular (肌内)

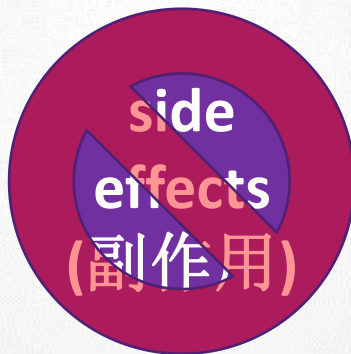
A: Highest priority (最高优先级); B: Middle priority (中等优先级); C: Low middle priority (低优先级); D: Lowest priority (最低优先级)

Ractopamine (莱克多巴胺)

- Ractopamine, which is a beta-agonist drug that increases protein synthesis, is used as an animal feed additive to promote leanness and improve feed conversion efficiency in livestock in some countries but banned in others. (莱克多巴胺是 β -促效剂，可用来增加蛋白质的合成。莱克多巴胺被用作动物饲料添加剂，以促进家畜的瘦肉率和提高饲料转化效率，但它逐渐被其他国家禁止使用。)
- As of 2014, the use of ractopamine was banned in 160 countries, including the European Union, China and Russia. The banned also include not allowing residues of ractopamine in imported food. (截至2014年，包括欧盟，中国和俄罗斯在内的160个国家已禁止使用莱克多巴胺。并不允许进口肉品中残留莱克多巴胺。)
- The ban is due to food safety reasons. The related drugs have been linked to the cardiovascular issue in humans. (该禁令是由于食品安全的原因。莱克多巴胺会造成人类健康的问题特别是心血管相关的问题。)

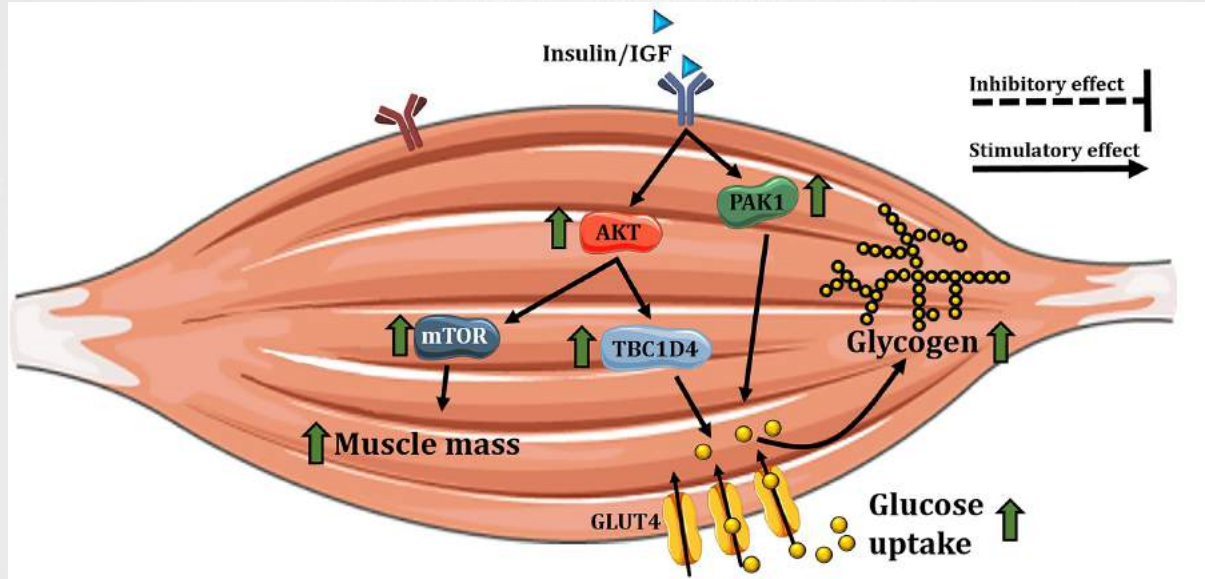
RACTOTIDE (肉多肽)

- Through extensive research and development on peptide technology, Win Men's Peptide Series presenting **RACTOTIDE**, an organic lean meat enhancer. (通过对肽技术的广泛研究和开发，云门的肽系列推出了肉多肽，一种有机瘦肉促进剂。)



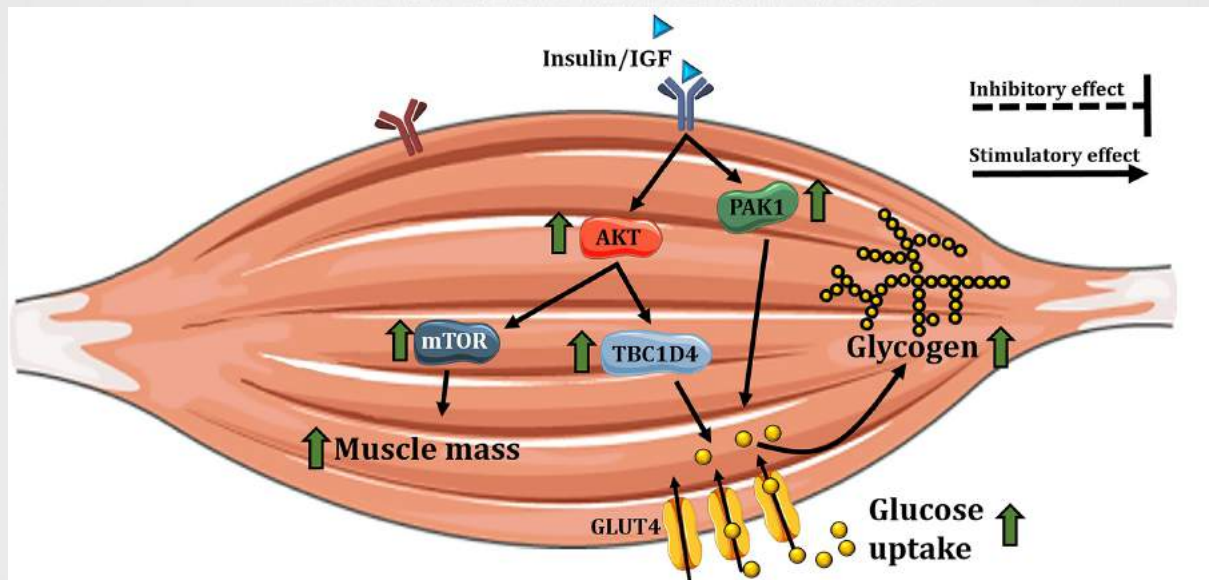
- RACTOTIDE**'s main functions are to promote lean muscle mass and improve flesh quality and slaughter rate. (肉多肽的主要功能是增加瘦肉肌肉质量，并改善肉的品质和提高屠宰率。)

The insulin and insulin-like growth factor (IGF) system [胰岛素和类胰岛素生长因子 (IGF) 系统]



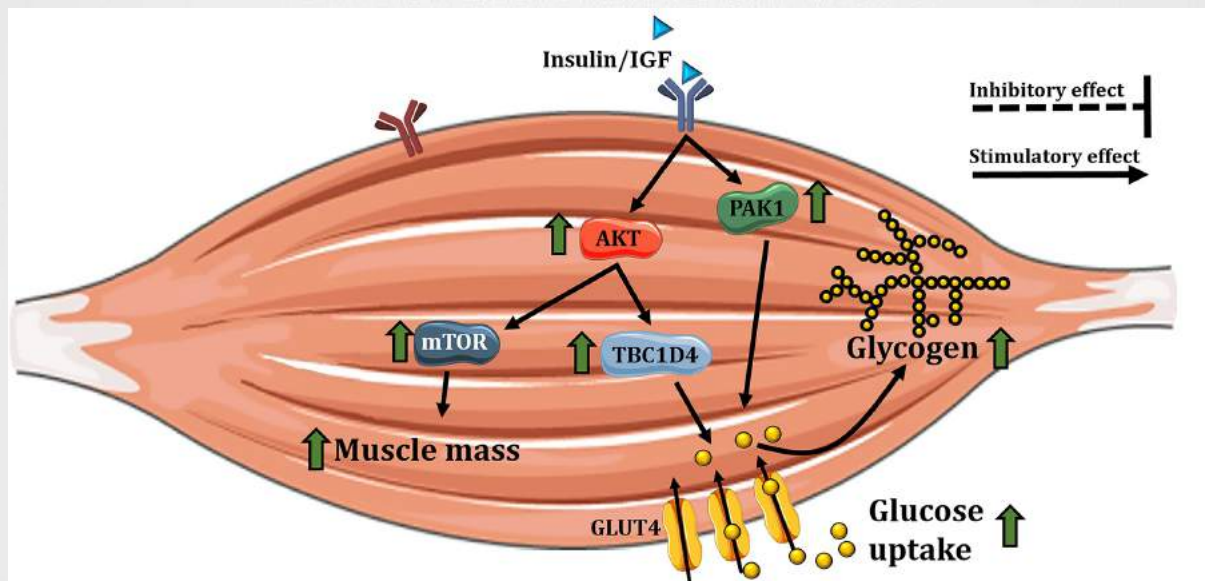
- The insulin and insulin-like growth factor (IGF) system is a complex network of ligands, receptors, and signalling pathways. (胰岛素和胰岛素样生长因子 (IGF) 系统是一个由配体，受体和信号通路组成的复杂网络。)
- Insulin and IGF are growth factors that are involved in various cellular processes: glucose metabolism, cell proliferation, differentiation, and survival. These processes are obligatory for muscle hypertrophy to proceed. (胰岛素和IGF参与了多种细胞过程如：葡萄糖代谢，细胞增殖，分化和存活。这些过程能促进肌肉增大。)

Muscle hypertrophy (肌肉增大)



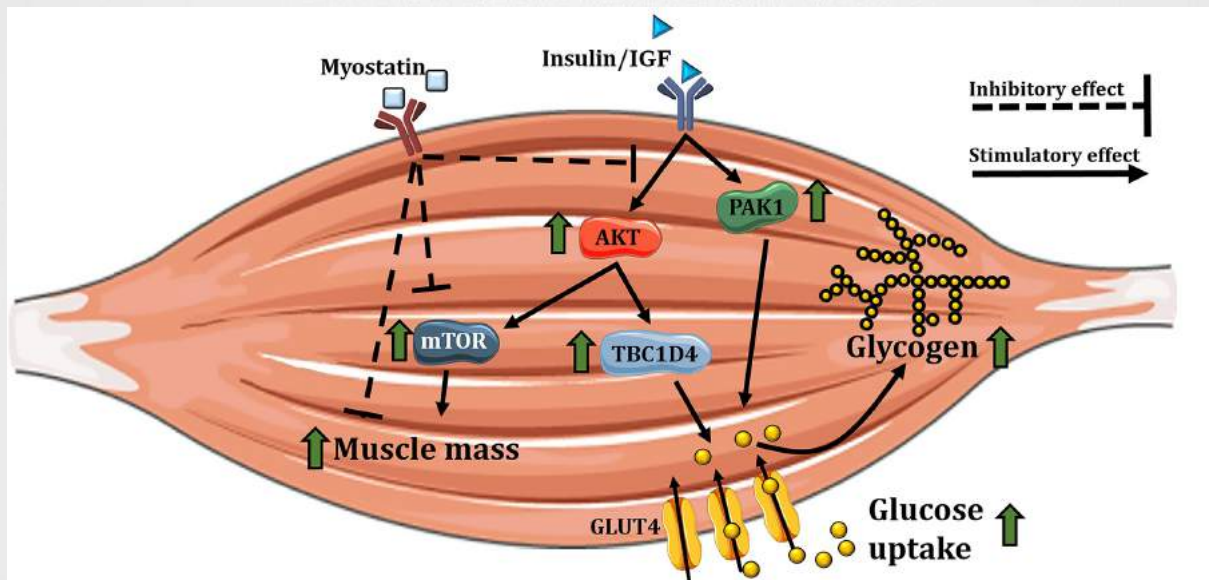
- Muscle hypertrophy involves an increase in the size of skeletal muscle through a growth in the size of its component cells. (肌肉增大主要是通过促进骨骼肌细胞的生长来增加骨骼肌的大小。)
- Two factors contribute to hypertrophy (促进肌肉增大的因素有两个):
 - Myofibrillar hypertrophy, which focuses more on increased myofibril size. (肌原纤维增大，注重于增长肌原纤维。)
 - Sarcoplasmic hypertrophy, which focuses more on increased muscle glycogen storage. (肌浆增大，注重于增加肌肉糖原存储。)

Glycogen and water retention (糖原和保水)



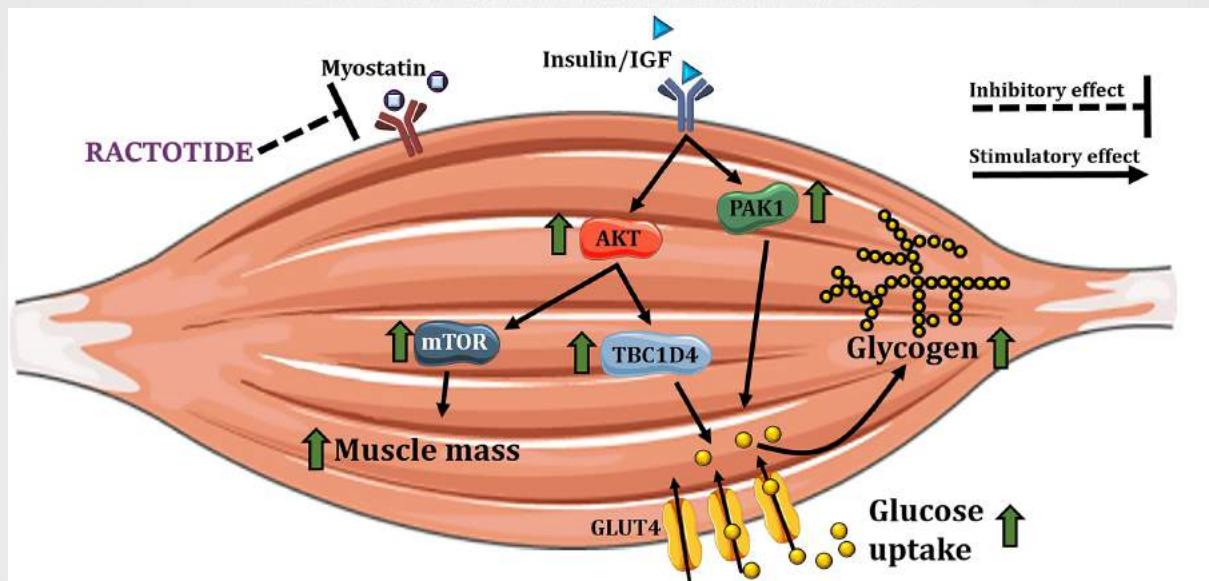
- Body stores carbohydrates in the form of glycogen. Most of this stored glycogen is in skeletal muscles (80%) and the rest is stored in the liver (20%). (糖原是身体储存碳水化合物的主要形式。糖原主要存在于骨骼肌中（80%），其余的储存在肝脏中（20%）。)
- Each gram of muscle glycogen contains 3 grams of water, which contribute to the muscle weight (muscle water retention). (每克的肌肉糖原含有3克的水，这会增加肌肉的重量（肌肉保水性）。)
- Water retention is one of the factors that determine meat juiciness. (保水是决定肉多汁性的因素之一。)

Myostatin (肌肉生长抑制素)



- Myostatin is a strong negative regulator of muscle growth that is produced by skeletal muscles to inhibit muscle growth. (肌肉生长抑制素是骨骼肌质量的负调节剂，可抑制肌肉的生长。)

Mechanism of RACTOTIDE (肉多肽的作用机制)



- **RACTOTIDE** can directly bind to myostatin and prevent binding to the receptor, thus the myostatin activity is inhibited to allow muscle hypertrophy. (肉多肽可以直接与肌肉生长抑制素结合并阻止它与受体的结合，因此抑制了肌肉生长抑制素的活性，从而导致肌肉增大。)
- Hence, **RACTOTIDE** increases the rate of weight gain, improves feed efficiency, and increases carcass leanness. (因此，肉多肽可增加动物的增重率，提高饲料效率，并增加屠体瘦肉率。)

The effect of RACTOTIDE on the average daily gain (ADG) of pigs

Phase	Control	RACTOTIDE (1 kg/ton feed)	Chromium picolinate (200 ppb)	Micro mineral premix (1 kg/ton feed)
Pre-starter (g)	351.6	372.4	362.5	358.7
Starter (g)	458.6	515.4	475.3	468.5
Grower (g)	687.5	728.8	685.6	686.1
Finisher (g)	714.5	761.4	721.1	717.1
Overall (g)	585.4	627.5	593.2	589.6

Diets supplied with **RACTOTIDE** significantly increased the ADG of pigs.
在日粮中添加**肉多肽**可提高猪的日增重。

The effect of RACTOTIDE on the feed conversion ratio (FCR) of pigs

Phase	Control	RACTOTIDE (1 kg/ton feed)	Chromium picolinate (200 ppb)	Micro mineral premix (1 kg/ton feed)
Pre-starter	1.68	1.60	1.63	1.66
Starter	2.05	1.84	1.95	2.02
Grower	2.93	2.75	2.89	2.90
Finisher	3.33	3.12	3.30	3.32
Overall	2.83	2.65	2.78	2.81

Diets supplied with **RACTOTIDE** significantly improved the FCR of pigs.
在日粮中添加**肉多肽**可改善猪的饲料转化率。

The effect of RACTOTDE on the carcass quality of pigs

Phase	Control	RACTOTIDE (1 kg/ton feed)	Chromium picolinate (200 ppb)	Micro mineral premix (1 kg/ton feed)
Live weight (kg)	97.20	97.18	97.10	97.12
Slaughter weight (kg)	96.40	97.00	96.95	96.90
Carcass weight (kg)	72.73	73.58	73.13	72.63
Carcass yield (%)	75.63	76.49	76.26	75.61
Lean meat (kg)	39.40	40.92	39.80	39.30
Lean meat (%)	54.56	56.06	54.82	54.50
Back fat measured on carcass (mm)	17.05	16.50	16.70	16.70
Back fat measured on animal (mm)	13.02	12.66	12.77	12.79

Diets supplied with **RACTOTIDE** significantly improved the lean meat yield of pigs.
在日粮中添加**肉多肽**可增加猪的瘦肉率。

Conclusion [结论]

- **RACTOTIDE** had demonstrated that it promotes lean muscle mass and improve flesh quality and slaughter rate in animals. (肉多肽可增加动物的瘦肌肉质量，并改善肉的品质和提高屠宰率。)
- Thus, **RACTOTIDE** can be used as an alternative to medicated animal feed additive to promote growth performance. (因此，肉多肽可用作药物动物饲料添加剂的替代品，以促进动物的生长性能。)
- The addition of **RACTOTIDE** into animal's diet is a safe way in animal production and promote sustainable development. (在动物饮食中添加肉多肽是绿色安全的动物饲料添加剂，是畜牧生产和促进可持续发展的有效途径。)

Recommended Usage (推荐用法)

- Mix 1 kg **RACTOTIDE** into 1 ton feed. (每公吨饲料添加1公斤的肉多肽。)



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