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VIV ASIA 2017

VIV Asia 2017, Bangkok is the most important event for livestock industry, was witness by visitors from all around the world. VIV Asia 2017, during 15-17 March 2017 marks a memorable day for many individuals that are involved in this industry.

Aside from visiting booths participating the exhibition, interested individuals can attend seminars and conference held during the show. All topics relating to the meat, eggs and aquaculture supply chains can be covered, ranging from feed ingredients, animal health, animal farm equipment, processing, packing, handling, refrigeration to the meat /egg/ aquaculture products.

VIV Asia 2017 has offered the best show to many visitors that have benefited from the exhibition. F.E Venture technical team is very fortune to be able to visit the exhibition.

2017年亚洲曼谷VIV展览会是对予全世界家禽农业的一项极重大活动，吸引了来自不同国家的参观者。2017年亚洲曼谷VIV展览会是在3月15日至17日举办，留给了每个参观者一个深刻的回忆。

在展销会期间，除了参观会场所所有的摊位，有兴趣者也可以出席由各参展商所举办的家禽，蛋业，水产农业的讲座和研讨会。这些讲座包括了饲料成份，动物健康，农作工具，包装和冷藏等等。

很多参观者在这次的亚洲曼谷 VIV 展览会中获益不浅。F.E Venture 的兽医们也有幸到访这次的展览会。



Is Mycotoxin A Threat In Poultry Industry?

真菌毒素是否会威胁家禽行业?

All poultry is sensitive to mycotoxins. Mycotoxins is the secondary metabolites produced by some fungal species, it may affect animal or human health. There are five common mycotoxin in poultry feed: Aflatoxin, Fumonisin, Ochratoxin, Zearalenone and Trichothecenes (T-2 toxin, Deoxynivalenol). In Malaysia, Deoxynivalenol and Fumonisin are the most common mycotoxins. Impacts of mycotoxin problem in poultry industry include reduction of feed intake, reduction of body weight gain, increase bird mortality and thus lead to economic loss for the industry. In addition, mycotoxin residues in poultry eggs and meat will pose a threat to human health.

所有家禽对霉菌毒素都是敏感的。真菌毒素是一些真菌物种的次生代谢产物，其可能会影响动物或人类的健康。家禽饲料中有五种常见的霉菌毒素：黄曲霉毒素，氟马西松，赭曲霉毒素，玉米赤霉烯酮和三氯烟酸（T-2毒素，脱氧雪腐镰刀菌烯醇）。在马来西亚，脱氧雪腐镰刀菌烯醇和烟粉菌素是最常见的真菌毒素。霉菌毒素对家禽行业的影响包括减少饲料摄入量，减少体重的增长，增加鸟类死亡率，从而导致经济损失。此外，禽蛋和肉类中残留的霉菌毒素将威胁人体健康。



What are the symptoms in affected birds? 受影响的鸟类有什么症状?

- | | |
|---|-------------|
| ◆ Poor weight gain | ◆ 体重增长不佳 |
| ◆ High feed conversion ratio | ◆ 饲料转化率高 |
| ◆ Lower carcass value | ◆ 肉的品质降低 |
| ◆ Beak and oral lesion | ◆ 喙和口腔损伤 |
| ◆ Abnormal feather | ◆ 羽毛不正常 |
| ◆ Increase morbidity and mortality rate | ◆ 增加发病率和死亡率 |

Post Mortem Lesion / 解剖的病变

- | | |
|---|----------------|
| ◆ Enlarge, pale yellowish and friable liver | ◆ 肝脏肿大，呈淡黄色和质脆 |
| ◆ Swollen kidney | ◆ 肾脏肿胀 |
| ◆ Reduced size of bursa of Fabricius | ◆ 法氏囊变小 |
| ◆ Gizzard erosion and ulceration | ◆ 胗侵蚀和溃疡 |



Abnormal size of bursa at Day 25 broiler chickens (normal bursa should 1.5 - 2 of spleen)

第25天肉鸡的法氏囊大小异常（正常法氏囊应为脾脏的1.5 - 2倍）

Are all mycotoxins cause same lesion? Different mycotoxins target different main organs?

所有真菌毒素是否导致相同的病变？不同的真菌毒素靶向不同的主要器官？

Mycotoxin 霉菌毒素	Target Organ 靶标器官	Effect 病变
Aflatoxin (A) 黄曲霉毒素	Liver 肝脏	Enlarge, fatty and friable 肿胀, 油腻, 质脆
Ochratoxin (O) 赭曲霉毒素	Kidney 肾脏	Enlarge, congested 肿胀, 充血
T-2 Toxin (T) T-2毒素	Mouth, tongue, gizzard 喙里, 舌头, 胗	Necrosis, ulcers, erosions 坏死, 溃疡, 腐蚀
Zearalenone (Z) 玉米赤霉烯酮	Female reproductive organs 雌性生殖器官	Enlarged, vulvovaginitis 肿胀, 外阴阴道炎
Vomitoxin /DON (D) 呕吐毒素	Liver and Intestine villi 肝脏和肠绒毛	Size reduction 变小
Fumonisin (F) 氟马西松	Lungs and heart 肺和心脏	Enlarged 肿胀



Normal Gizzard
正常的胗



Mild Erosion
轻微的腐蚀



Moderate Erosion
中等的腐蚀



Severe Ulceration
严重的溃疡

How to treat and prevent mycotoxicosis in poultry?

如何治疗和预防家禽的霉菌毒素病？

1. Add toxin binder such as Toxiveex Plus 200 into drinking water.
2. Liver supplement to reduce liver damage such as Meboliv.
3. Methionine supplement to increase level of glutathione in liver for detoxification.
4. Antioxidants such as Vitamin E and Selenium.

1. 将毒素粘合剂，例：Toxiveex Plus 200 加入饮用水中。
2. 使用肝脏补充剂，如 Meboliv 以减少肝的损伤。
3. 甲硫氨酸补充剂可提高肝脏中谷胱甘肽的水平，帮助解毒疗效。
4. 抗氧化剂如维生素E和硒。



For further information, please contact us at F.E Venture Sdn Bhd 03-5633 3493 or Dr. Wong 012-621 3913

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Understanding Coccidiosis for Maximum Profit

了解球虫病以获得最大的利润

Etiology 病因学

Various *Eimeria* spp which parasitize specific portions of the intestinal tract of chickens.
各种艾美球虫寄生在特定的鸡肠道部位。

Occurrence and Economic Significance 发生与经济意义

Coccidiosis occurs world-wide and is a major cause of mortality and suboptimal growth and feed conversion efficiency in flocks unless appropriate preventive measures are implemented.

The global impact of coccidiosis due to decreased performance, morbidity, and mortality is an estimated \$300 million US dollars.

– Source :The Poultry Site (Title : High Cost of Coccidiosis in Broilers 08 February 2013)

球虫病遍布世界各地，若不采取适当的预防措施，它将是死亡率，次优生长和饲料转化效率减低的主要原因。

球虫病在全球引发的鸡只表现欠佳，发病率和死亡率的提高，造成估计3亿美元的损失。

Transmission 传播

The sporulated oocyst is the infective stage of the life-cycle. Infected, recovered chickens shed oocysts representing a problem in multi-age operations. Oocysts can be transmitted mechanically on the clothing and footwear of personnel, contaminated equipment, or in some cases, by wind spreading poultry-house dust and litter over short distances.

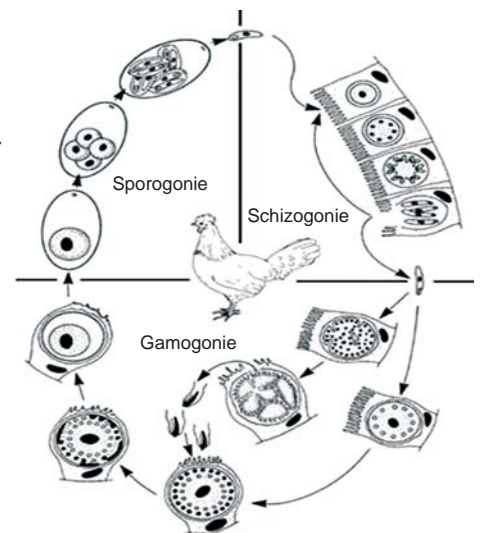
Factors contributing to outbreaks of clinical coccidiosis include:-

- ♦ litter moisture content exceeding 30% due to ingress of rain or leaking waterers.
- ♦ immunosuppression (Marek's disease, IBD, mycotoxins)
- ♦ suboptimal inclusion of anticoccidials or incomplete distribution (poor mixing) in feed.
- ♦ environmental and managemental stress such as overstocking, inoperative feeding systems, inadequate ventilation.

孢子形成的卵囊是生命周期的传染阶段。被感染，康复后的鸡所排出的卵囊将在多年龄层运作中隐射问题。卵囊可以透过人员的衣服和鞋子，受污染的设备机械传播，或者在某些情况下，通过风吹动禽屋灰尘和木屑，短距离的传播。

导致临床球虫病爆发的因素包括：

- ♦ 雨水或漏水的饮水机导致木屑含水量超过30%。
- ♦ 免疫抑制（马立克氏病，鸡传染性法氏囊炎，真菌毒素）。
- ♦ 不足量的抗球虫剂或饲料中分配不均匀（混合不良）。
- ♦ 环境和管理问题，如饲养过度密集，食料馈送系统操作问题，不够通风。



Pharmacological Properties 药理性质

Amprolium is an anticoccidial that acts by inhibiting thiamine in the parasite metabolism. It is poorly absorbed after oral administration, reaching the maximum concentration after 30 min - 1 hour. It is basically eliminated by renal route.

Coccidiostatic: The molecular structure is similar to those of Thiamin (Vit B1), in this way competitive antagonism takes place at Eimeria enzymatic system. As Thiamine is necessary during the division phase, multiplication becomes impossible.

Inhibition takes place at both Schizogony-Merogony and Gametogony phase.

It is active against : *Eimeria tenella*, *E. necatrix*, *E. praecox*, *E. mitis*, *E. meleagrimitis*, *E. adenoides*, *E. gallopavonis*, *E. bovis*, *E. zuernii*, *E. acervulina*, *E. brunetti*.

Amprolium是通过抑制在寄生虫代谢中硫胺素而起作用的抗球虫病剂。口服后吸收不良，30分钟~1小时后达到最高浓度。基本上通过肾脏途径排除。

球虫抑制剂：分子的结构类似硫胺素（Vit B1），在艾美球虫酶系统里进行竞争性拮抗作用。由于硫胺素在分裂过程中是必需的，所以繁殖变得不可能。

抑制过程是在裂体生殖期和配子生殖期发生的。

它有效的对付：柔嫩艾美耳球虫，毒害艾美耳球虫，早熟艾美耳球虫，缓艾美耳球虫，小火鸡艾美耳球虫，腺样艾美耳球虫，孔雀艾美耳球虫，牛艾美耳球虫，邱氏艾美耳球虫，堆型艾美耳球虫，布氏艾美耳球虫。

Clinical Signs 临床症状

Coccidiosis is generally acute in onset and is characterized by depression, ruffled plumage, and diarrhea. Birds infected with *E. tenella* show pallor of the comb and wattles and blood-stained cecal droppings.

球虫病在发病时通常是急性的，其特征是精神委顿，全身羽毛竖立和腹泻。被柔嫩艾美耳球虫感染的鸟类鸡冠和肉垂苍白，会排出带血的粪便。

Lesions 病变

E. acervulina and *E. mivati*: 1-2mm areas of hemorrhage interspersed with white foci visible through the serosa of the distal duodenum and proximal jejunum.

E. necatrix: severe distention of the mid-jejunum with hemorrhages in the mucosa and red-stained fluid in the lumen.

E. maxima: distention of the mid-jejunum with hemorrhages in the mucosa.

E. tenella: hemorrhagic typhlitis (inflammation of the cecum).

堆型艾美耳球虫和变位艾美耳球虫：可在十二指肠后端和空肠前端的浆膜看见1-2mm穿插着白色斑点的出血区域。

毒害艾美耳球虫：中空空肠严重膨胀，粘膜出血和管腔内有红染色液体。

巨型艾美耳球虫：中段空肠膨胀与粘膜出血。

柔嫩艾美耳球虫：出血性盲肠炎（盲肠炎）。

Diagnosis 诊断

Gross lesions of *E. tenella*, *E. necatrix* and *E. brunetti* are diagnostic. Microscopic examination of intestinal and cecal scrapings reveals oocysts. To confirm a diagnosis in a commercial operation the following specimens should be submitted to a laboratory:

- Intestine from a sacrificed, affected bird preserved in 5% potassium dichromate for culture and identification of *Eimeria* sp.
- Intestine showing gross lesions in 10% formalin for histological examination.
- Representative feed samples for anticoccidial assay.
- Litter samples for oocyst counts.

柔嫩艾美耳球虫，毒害艾美耳球虫和布氏艾美耳球虫的病变是诊断性的。肠和盲肠刮片的显微镜检查将显示卵囊。若要在商业运作农场中确认诊断，可以提交以下样本给实验室：

- 牺牲受影响的鸟类，将其肠道放入5%重铬酸钾中保存，用于培养和鉴定艾美耳球虫属类。
- 将显示病变的肠道浸入10%福尔马林，供组织学检查。
- 饲料样品查验抗球虫剂物。
- 木屑样本计数卵囊。

Treatment 治疗

Coccilen (20% Amprolium Wsp)

Advantages 优点

Mycotoxin 霉菌毒素	Amprolium 氨丙啉	Toltrazuril 妥曲珠利	Sulfaquinoxalin 磺胺喹沙啉
Efficacy against most <i>Eimeria</i> spp. 对大多数艾美耳球虫的功效	Good 良好	Good 良好	Limited 有限
Mode of Action 行动模式	Coccidioastat 球虫抑制剂	Coccidioacidal 球虫杀除剂	Coccidioastat 球虫抑制剂
Choice of Drug 药物选择	As Treatment and Preventive of Coccidiosis 治疗和预防球虫病	As Treatment of Coccidiosis 治疗球虫病	As Prevention of Coccidiosis 作为预防球虫病
Safety 安全性	Can be used in laying hens, zero day withdrawal period for broiler meat and eggs 可用于产蛋鸡，在肉鸡和鸡蛋需零日停药期	Long withdrawal period in broiler meat - 18 days, should not be used in laying hens 悠长的停药期，鸡肉需18天；不应用于产蛋鸡	Causes kidney damage , should not be used in layer hens 损害肾脏，不应在蛋母鸡中使用

Prevention 预防

Management procedures which limit saturation of litter include:

- ♦ Appropriate installation and management of watering systems. Nipple drinkers reduce spillage of water onto litter compared to bell and trough drinkers.
- ♦ Acceptable ventilation rate.
- ♦ Maintaining recommended stocking density.
- ♦ Providing adequate feeding space.
- ♦ Inclusion of anticoccidials in diets at recommended levels will prevent clinical infection.
- ♦ Chemical and ionophoric anticoccidials for broilers in shuttle programs.
- ♦ Synthetic coccidiostats for breeders and floor-reared commercial egg production flocks which allow the development of premunity.

Coccidial vaccines are appropriate for replacement breeding stock and roasters. This approach is cost-effective but requires experienced and diligent management and monitoring especially if the vaccine is applied over feed. Intraocular administration by spray or the insertion of a gelatin cylinder impregnated with oocysts in the chick delivery box contributes to an even distribution of vaccine through the flock.

限制木屑溼湿的管理程序包括：

- ♦ 适当安装和管理饮水系统。与钟形和槽饮式相比，乳头式饮水减少了水溢漏到木屑上的问题。
- ♦ 合适的通气率。
- ♦ 维持所推荐的放养密度。
- ♦ 提供足够的饲养空间。
- ♦ 在饮食中添加推荐量的抗球虫剂以防止临床感染。
- ♦ 在肉鸡饲养程序中交替使用化学和电离抗球虫药品。
- ♦ 在种鸡和饲养在地板的商业蛋鸡生产群里使用合成球虫疫苗，好允许传染免疫的发展。

抗球虫疫苗适用于替代种鸡和公鸡。这种方法具有成本效益，但需要经验丰富的管理和监测，特别是如果疫苗是透过饲料施用。通过喷雾进行眼内施用或将含有卵囊的明胶圆筒插入小鸡传送箱中，将有助于让疫苗均匀分布在鸡群中。

For further information, please contact us at F.E Venture Sdn Bhd 03-5633 3493 or Dr. Jolene Poo 012-455 7827
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The use of “Effective Micro-organisms” with Larvacide as the Biologic Control of House Flies in Poultry Production.

使用“有效微生物”与杀幼虫剂作为杀灭苍蝇在农场的生物防治。

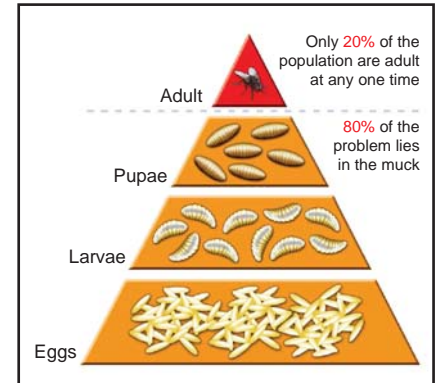
When poultry is kept under confined conditions for meat production, manure accumulate and forms a suitable substrate for the breeding of flies.

The most common fly species are:

- ◆ House fly (*Musca domestica*)
- ◆ Lesser House fly (*Fannia spp*)
- ◆ Black Garbage fly (*Ophyra spp*)
- ◆ Horn fly (*Haematobia irritans*)
- ◆ Head fly (*Hydrotea irritans*)
- ◆ Stable fly (*Stomoxys calcitrans*)
- ◆ Face fly (*Musca autumnalis*)

These flies not only irritate the birds, but also people on the premises and in surrounding.

House flies are difficult to control using insecticides, as the chemicals may contaminate the food of the birds or affect them directly.



Effective Micro-organisms (Farm Fresh™) is a non-chemical natural, insect repellent and is non-toxic. Farm Fresh™ is used to prevent disease and pest problems in production units. It is usually sprayed on surface of manure at a dilution of 1/500 in water. Farm Fresh™ could also eliminate unpleasant gases, such as ammonia gas and hydrogen sulfide from manure. This help to improve farm environment by reduce the unpleasant gasses as attractants to flies.

Cyrozine™ is a larvacide containing the insect growth regulator (IGR) cyromazine. Ideal for use in a wide variety of production units, Cyrozine™ prevents larvae from developing into flies, giving longer lasting fly control and greater impact on total fly populations.

When to use and why?

- ◆ Flies spread diseases and cause production losses
- ◆ Adult flies are only 20% of the problem
- ◆ Cyrozine kills the 80% of flies present in manure as larvae
- ◆ For maximum effect, Effective Micro-organisms and larvacide can be used together

当家禽在受限制的环境条件下生长时，粪便的累积会形成了适合苍蝇繁殖的温床。

最常见的飞蝇类有：

- ◆ 家蝇
- ◆ 小家蝇
- ◆ 蚋
- ◆ 角蝇
- ◆ 头蝇
- ◆ 厩蝇
- ◆ 面蝇

这些苍蝇不仅困扰家禽，而且也极其令周围的人恼火。

使用杀虫剂是难以控制家蝇的，因为杀虫剂里的化学物品可能会污染禽群的食物或直接影响它们的生活。

有效微生物（Farm Fresh™）是一种非化学，无毒的天然驱虫剂。Farm Fresh™ 可用于预防家禽感染疾病和农场有害生物的问题。它通常以1：500的稀释度溶于水，然后喷洒在粪肥的表面上。使用Farm Fresh™ 还可以消除难闻的气体，如粪便排出的氨气和硫化氢。减少难闻的气体有助于改善农场的环境，进而减少苍蝇的问题。

Cyrozine™是含有昆虫生长调节剂（IGR）环丙胺的杀幼虫剂。Cyrozine™ 适用于各种家禽生产类，它可防止幼虫发育成苍蝇，促使更持久的飞蝇控制，并影响苍蝇的孳数。

使用的时间和为什么要使用？

- ◆ 苍蝇传播疾病并造成生产的损失
- ◆ 成年苍蝇只是问题的20%
- ◆ Cyrozine 可杀死80%在粪便里生存的幼虫
- ◆ 为了达到最好的效果，有效微生物和杀幼虫剂可以一起使用



For further information, please contact us at F.E Venture Sdn Bhd 03-5633 3493 or Ms. Chang 014-931 3412

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Comparison of Local Tolerance of Colmyc-E Injectable VS Other Brand of “Brand B” Enrofloxacin Injectable

Colmyc-E 注射剂和其他品牌 “Brand B” Enrofloxacin 注射剂局部反应的比较



s.p. veterinaria, s.a.

Formulation Development of COLMYC-E INJECTION / COLMYC-E 注射剂的配方开发

Enrofloxacin has a very low solubility in water making it difficult to be administered as oral or injectable solution. To obtain a solution sufficiently concentrated, up to now it was necessary, to increase the pH up to 11 – 14 with hydroxides. For administration through drinking water this is not a problem because the doses at which the product is administered, the change in pH of medicated water is scarce.

In the case of parenteral preparations, administering a substance with a pH of 11-14 means applying a **highly corrosive** substance, according to the OECD classification of **category 1**, the highest, which causes tissue necrosis.

Since the solubility of Enrofloxacin is pH dependent, the use of hydroxy-carboxylic acids enables a solution with a pH **4 to 6**.

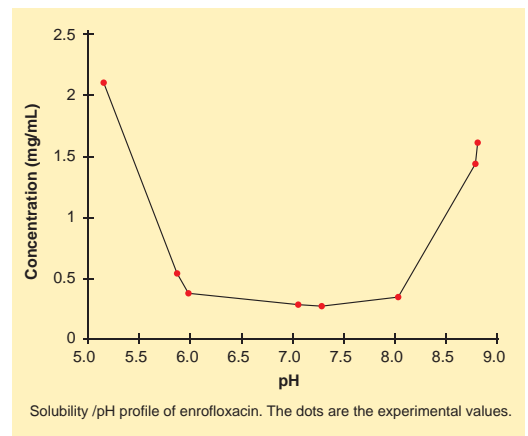
This pH is closer to the tissue pH; consequently the preparation becomes neither corrosive nor irritating to the animal tissues.

Enrofloxacin 不易溶于水，使其难以溶液状态为口服或注射使用。若要获得充分的浓缩剂量，截至目前为止，都需使用氢氧化物将 pH 增加至 11-14。这不会影响通过饮用水的使用方法，因为使用的剂量将不足以改变饮用水的 pH。

可是若用在注射的情况下，pH 为 11-14 意味着高度腐蚀性物质，根据 OECD 分类的类别 1，其 pH 将会导致组织细胞坏死。

因 Enrofloxacin 的溶解度是赖于 pH，所以使用羟基羧酸能使溶液处于 pH 4 至 6。

该 pH 更接近细胞组织的 pH，因此药剂变得对动物细胞组织即无腐蚀性或刺激性。



Lizondo 1997

For the development of **COLMYC-E INJECTION** a formula with a suitable pH was considered, to minimize corrosive or irritant effects in animal tissues.

The pH chosen for the product ensures the formation of the salt and also a **better tolerance** in the injection as it is in the range of pH considered as suitable for parenteral administration (from 4 to 8).

To control the expected improved tolerance of the new drug, a local tolerance study was conducted, compared with Brand-B and placebo

S. P. Veterinaria patronized the following study: **J.Goutalier and col, 2008**

The main goal of this study was **to compare the local tolerance of the reference product Brand-B, the experimental product COLMYC-E INJECTABLE and placebo (saline physiologic solution)** after intramuscular administration in pigs during 3 consecutive days.

The study was performed at a centre under Good Laboratory Practices compliance (Phathophy, France)

为了发展 COLMYC-E INJECTION，一个拥有合适 pH 的配方被研发，以减低药物对动物细胞组织的腐蚀性或刺激性。

选择用于产品的 pH 确保盐的形成，并且在注射时也具有更好的局部耐受性，因为它在适合于肠胃外给药的 pH 范围内（从 4 至 8）。

为了控制新药的预期改善耐受性，所有进行了一个与 Brand-B 和测控剂相比的局部耐受性研究。

本研究的主要目的是比较猪只在连续 3 天肌肉注射参考产品 Brand-B，实验产品 COLMYC-E INJECTABLE 或测控剂（盐水生理溶液）后的肌肉局部耐受性。

该研究在“良好实验室规范”（Phathophy, France）的中心执行。



s.p. veterinaria, s.a.

Implementation Of The Study 研究的实施

Per group 8 pigs were used, with body weight between 17 - 26 kg at baseline.

每组使用8只猪，体重17至26公斤

Diagram of the in vivo phase 体内研究阶段的图解

Day 天数	Events 活动
From day 5 to day 1 第一至第五天	Acclimation period 适应期 Daily observations 每日观察 Inclusion in the study 研究期间的饲料消耗量 Marking the injection site 标记注射部位 Clinical examination 临床检查 Weight and identification 重量和标志
Day 1 第一天	Before treatment, blood sampling for analysis at T0 治疗前，在T0时，进行血液采样以供分析 Weight, 1 st injection treatment 测量体重，第一次注射治疗 Observation 观察 Consumption 消耗量
Day 2 第二天	Treatment: 2 nd injection 第一次注射 Observation 观察 Consumption 消耗量
Day 3 (last day of treatment) 第三天 (最后一天治疗)	Treatment: 3 rd injection 第三次注射 Observation 观察 Consumption 消费量 Blood sampling at T6 hours 注射6小时后进行血液采样 Weight 测量体重 Sacrifice of 4 pigs (2 males and 2 females) T6 hours 注射6小时后牺牲4只猪(2公和2母)
Day 3 to Day 9 第三至第九天	Observation 观察 Consumption 消耗量 Sacrifice of 4 pigs (2 males and 2 females) day 7 在第7天牺牲4只猪(2公和2母)
Day 10 第十天	Observation 观察 Consumption 消耗量 Blood sampling 血液采样 Weight 测量体重

The doses used were those recommended by prospectus, 2.5ml of product per 100kg body weight.

We studied clinical and productive parameters, and anatomo-pathological study of the injection site.

使用的剂量是按照说明书推荐的剂量，每100kg 体重2.5ml 的产品。

我们研究了临床和生产参数，以及注射部位的解剖 - 病理。



s.p. veterinaria, s.a.

RESULTS 成绩

Body weight

We observed a gradual weight gain throughout the study period and it was similar in all groups, confirming a lack of effect on the growth of both treatments.

Consumption

During the in vivo phase consumption of water and feed were daily monitored. Evolution of consumption parameters showed no differences between groups.

Behaviour and faeces

Animals' behaviour was compatible with good health.

Sacrifice and necropsy

4 animals of each group were sacrificed the same day, 6 hours after the last dose administration and blood extraction.

Injection sites were removed and samples of 1cm² and 3cm deep were taken, centered on the injection site, for histological study, after being properly identified.

Only one animal showed a local reaction in the placebo group after the 1st and 2nd administration.

In the experimental group (treated with **COLMYC-E INJECTION**) in **13 of the 24 observations**, a slight reaction was shown.

In the Group receiving reference treatment (Brand-B), 21 of the 24 observations showed local reaction.

Pictures obtained from the injection sites reveal intensity of these lesions.

体重

在整个研究期间，我们观察到所有组别中的体重都是相似的逐渐增加，这证实两种治疗对生长没有影响。

消耗量

在体内研究阶段期间，猪只每天的饮水和饲料的消耗量都被监测。消耗参数的变化显示组间无差异。

行为和粪便

动物的行为与健康相符。

牺牲和尸检

每组4只动物在最后一次给药和抽血6小时后的同一天处死。

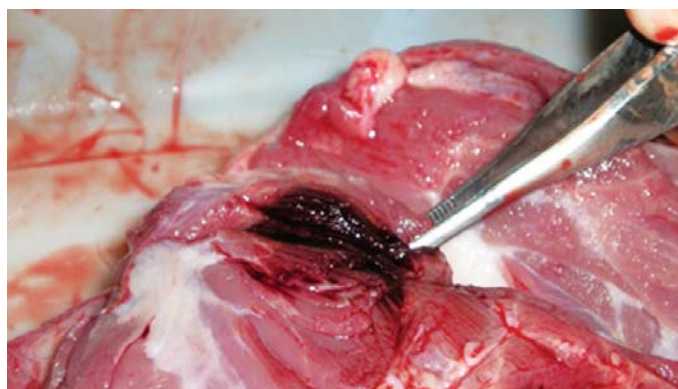
取出注射部位，在进行正确鉴定后以注射部位为中心，采集1cm²，3cm深的样品，进行组织学研究。

第一次和第二次给药后，只有一只动物在测控剂组中显示局部反应。

使用COLMYC-E注射液处理的实验组：在24次观察中，有13次显示了轻微的局部反应。

接受参考产品（Brand-B）治疗的组中，24次观察结果中有21次显示出局部反应。

图像显示注射部位的损伤的程度。



Brand-B



COLMYC-E INJECTABLE

J.Goutalier and col, 2008 (Phathophy, Francia)

Biochemical And Histopathology Examination

The only value for which differences were detected between treatment and control groups was the CPK (Creatinine Phospho Kinase) parameter.

Histopathology

Damages observed in the injection site were:

- ♦ Haemorrhagic infiltration Inflammatory reaction
- ♦ Fiber necrosis
- ♦ Dissociation of muscle fibers

Conclusions

The study was conducted under Good Laboratory Practices.

The design included a negative control (placebo) and a positive control (well-known Brand-B) allowing a more clearly tolerance assessment of the veterinary drug **COLMYC-E INJECTION**. Results show that that both treatments have a good **systemic** tolerance.

In respect to **local** tolerance, experimental product **COLMYC-E INJECTION** produces less local reactions than Brand-B.

In conclusion, the experimental treatment **COLMYC-E INJECTION** showed a superior local and general tolerance than the reference treatment (Brand-B).

J.Goutalierand col, 2008 (Phathophy, Francia)

生物化学和病理学检查

在治疗组和对照组之间检测的唯一差异值是CPK（肌酸磷酸激酶）参数。

组织病理学

在注射部位观察到的损伤是：

- ♦ 出血性浸润炎症反应
- ♦ 纤维坏死
- ♦ 肌肉纤维解离

结论

动物的行为与健康相符。

牺牲和尸检

该研究是在良好实验室规范下进行的。

该设计包括阴性对照（测控剂）和阳性对照（知名品牌B），以对兽药COLMYC-E注射进行更明确的耐受性评估。结果表明，两种治疗方法均具有良好的系统耐受性。

对于局部耐受性，实验产品COLMYC-E INJECTION产生比Brand-B更少的局部反应。

结论是，实验治疗COLMYC-E注射比参考治疗（Brand-B）显示更优异的局部和一般耐受性。



For further information, please contact us at F.E Venture Sdn Bhd 03-5633 3493 or Dr. Ong 012-329 1854

有关详细的资料，请联络F.E Venture Sdn Bhd 03-5633 3493 或 Dr. Ong 012-329 1854

S.P. Veterinaria Incentive Trip, Spain / S.P. Veterinaria 西班牙奖励团之旅

Our sales and technical team personal had an opportunity to visit S.P. Veterinaria factory at Tarragona, Spain recently during 3 April to 6 April 2017.

S.P Veterinaria is a 100% Spanish company dedicated to the development, manufacture and sale of products for the veterinary industry. With more than 50 years' experience, its wide range of treatments comprises an extensive catalogue of pharmacological products, medicated premix, nutritional formulations, insecticides and disinfectants.

Our trip to Spain was a thrilling and exciting, which we had a chance to visit the Roman city of Barcelona. It was indeed an uplifting and inspiring incentive trip to our sales and technical group.

我们的销售营业团队和兽医们在2017年4月3日至6日的期间有机会到访位于西班牙Tarragona的S.P. Veterinaria 工厂。

S.P Veterinaria 是一家100%的西班牙公司，专门开发，制造和销售兽医药品。它拥有50多年的经验，广泛的产品包含有药物，饲料，营养配方，杀虫剂和消毒剂。

这一次的旅行，也让我们有机会参观罗马城市 - 巴塞罗那。这确实是我们销售营业队和兽医们激动人心的激励之旅。

