SUMMARY

In horses lameness infers a wide variety of conditions the outcome of which are generally described as inhibiting or impairing mobility of the animal. One of the major causes of lameness is arthritis, a degenerative condition of joints causing chronic disease and inflammation.

NSAIDs are the first line and accepted treatment for lameness although recently more owners resort to nutritional supplements which have been gaining increased usage. Certain supplements with pronounced efficacy have been described as Nutraceuticals and one such product is Lyproflex, a proprietary cold processed Green Lipped Mussel product with Omega-3 series PUFAs including Eicosatetraenoic Acids (ETAs) demonstrating pronounced anti-inflammatory properties.

This study assessed the use of Lyproflex Equine in a wide cross section of general usage amongst owners/managers of horses in commercial stables. Results after 4 weeks demonstrate a substantial decrease in the severity of lameness and increasing mobility across the board. 77% of horses in 64 locations overall responded positively to Lyproflex Equine. The response in arthritic horses is substantial and parallels that described in Medical studies. Compared to existing treatments, including Phenylbutazone or other supplements based upon Glucosamine/Chondroitin mixtures or Devils Claw, Lyproflex Equine produced a profoundly improved mobility and decrease in lameness severity when used concomitantly with horses already stabilised on these products. Horses on Bute further improved to such an extent that their Quality of Life, as demonstrated by owner description, has been so enhanced that a justification can be made to feed Lyproflex Equine to horses on Bute with a view to reducing dosage and improving mobility and Quality of Life further.

Lyproflex Equine decreased lameness in horses being feed Glucosamine/Chondroitin mixtures. Clearly these products, whilst possibly useful for the longer-term health of the joint and to help minimise tissue degradation, have little or no anti-inflammatory activity when compared to Lyproflex Equine and which is a key clinical feature of arthritis in animals and humans alike.
**INTRODUCTION**
Lyproflex Equine is a nutraceutical supplement whose active ingredient is Lyproflex, a proprietary product derived from New Zealand Green Lipped Mussel (Perna canaliculus).

Lyproflex contains Omega-3 series PUFAs Known to soothe stiff and sore joints and including High Strength Eicosatetraenoic Acids (ETAs) shown to demonstrate significant anti-inflammatory properties in independent biochemical and pharmacological studies.

Lyproflex Equine has been confirmed by Veterinary Studies to be an effective joint care nutraceutical to help soothe sore joints and maintain mobility in horses which was demonstrated in a range of typical conditions found in General Practice and described as “lameness”.

The aetiology of lameness is multifactorial and often used as an “umbrella” description for a variety of conditions. Lame horses are often treated with either traditional NSAIDs, Nutritional supplements or both. Whilst the efficacy of NSAIDs are known and established the consistent efficacy of Nutritional Supplements has sometimes been questioned. In order to determine the efficacy of Lyproflex in general use with a wide variety of horses, locations and management, a multicentre Post Marketing Surveillance Study was carried out between January and April, 2002.

**AIMS**
The Aim of this Open Study was to assess the efficacy of Lyproflex Equine when used by individual horse owners in a wide variety of horses, conditions and environments. In addition to assessing the typical types of “lameness” found in a general equine population, the use of other medication was also noted and in particular, the speed in which visible changes in the animals condition became apparent and the degree of change brought about by the use of the product was to be assessed.

**OBJECTIVES**
The Study Objective were as follows.

1. Recruit a wide variety of horses and owners into the study,

2. Determine the initial diagnosis/origin of the lameness, and general details of the horse to be assessed.

3. Note any concomitant medication or product usage.

4. Determine the initial and ongoing degree of lameness over a period of 4 weeks.

5. Determine the opinion of the owners.

**METHODS**
In order to assess sufficient numbers and variety of conditions, horses were recruited to the trial through professional stables across the United Kingdom. Commercial stables were identified randomly by the use of a commercial mailing list as they were believed to represent a difficult and sceptical base of owner/managers with access to a variety of horses and conditions.

One months supply of Lyproflex Equine was provided to the first respondents to two batches of mailings producing 130 trialists. Data was collected by either Faxback or individual telephone interviews. Each owner/manager was individually contacted and specific details recorded.

- The Age of the horse
- The apparent problem of the horse
- Existing concomitant medication/supplements.*
- The original assessment of lameness in the horse before Lyproflex Equine.
Subsequent contact was made after thirty days when the trial supply had run out, the individuals were telephoned and asked for a further evaluation. These questions were:

- The assessment of the Lameness after thirty days on Lyproflex Equine.
- Comments Actions etc.

*= No change to any existing regime was recommended until a response to Lyproflex Equine was observed.

**Method of Assessment**
The assessment of lameness was measured on an analogue scale of 1-5. 5 being very unsound and lame and 1 being sound. This question was asked before treatment with Lyproflex and at the end of a 4 week period.

Other responses including comments were noted.

**RESULTS:**

**DEMOGRAPHICS**
The study took place between January 2002 and March 2002. In total 130 people responded to the mailing from a mailing of 800 stables.

**Size of the group.**

Out of the original mailer, 64 owner/managers were contacted and provided completed study details. This represents over 50% of the initial study group which for such a “distance-based” study design is encouraging.

**The Age Range.**
The age of the horses in the survey, as would be expected for a study of lameness, varied from 9 to 35 years old with mean age of 21.8 years old.

**Description Of Lameness**
The majority of the conditions were well defined.

- Arthritis  42
- Joints/Old Age*  12
- Others  10

**TOTAL 64**

* Joints/ old age represents horses that have not been diagnosed with a condition recognisable as relative to specific joints and could be a attributable to different conditions associated with old age. Others were conditions that are not directly arthritic (e.g., splints, spavins, ligaments etc.) but may have a secondary arthritic component.

**Horse Medication/Supplements.**
The details from the 64 respondents showed,

- 24 were using Phenylbutazone
- 16 were using Supplements
- 24 were not using any product.

The most popular supplements were Devils Claw and Glucosamine/Chondroitin combinations generally.

**Summary Of Results**
These are shown in the Table and Chart.

**Overall**
In total 49 horses responded to Lyproflex Equine within the first few weeks of treatment or 77%.
The improvement in condition was greater than 1.6 Scale units and changed the average horse from being severely incapacitated to being able to begin returning to gentle work or facing substantially improved Quality of Life.

Non-Responders
Of the 15 non-responders, only 3 were confirmed with arthritis and the rest described as “old age”, or “general stiffness” not necessarily related to joint inflammation. Six were prescribed Phenylbutazone and the balance were not given any medication despite all being initially grade 5 or 4.

Responders
Those horses responding demonstrated an average improvement in lameness of greater than 2 scale units. This represents a substantial improvement in Quality of Life, the ability to return to some degree of useful work or satisfaction for the owner.

Sub-analysis of the Responder group clearly confirms the anti-inflammatory action of Lyproflex Equine in cases of inflammatory arthritis. In the last few years there has been a substantial increase in the use of Nutritional...
Supplements for Joint Care in humans as well as dogs and horses. This has lead to the introduction of many products generally based upon Glucosamine/Chondroitins or herbal products such as “Devils Claw”. Despite being normalised on their concomitant supplements these horses demonstrated severe lameness scores with an average of nearly 4 units! The addition of Lyproflex Equine substantially improved the condition and mobility of these horses! The average scores changed from 3.81 to 1.94, almost 2 units improvement in stiffness, mobility and movement!

DISCUSSION
The use of Perna canaliculus has been established since the early 1970’s as a supplement to maintain joint mobility in arthritic people. In parallel, products derived from NZ Green Lipped Mussels (GLM) were used in animals. In both cases there was mixed success and variability. This was eventually attributed to inconsistent production methods which relied upon heat treatment to process the mussels.

Subsequently, further investigation identified omega-3 series PUFAs including EPA, DHA and newly characterised range of Polyunsaturated Fatty Acids described as Eicosatetraenoic Acids (ETAs). These Omega-3 series ETAs are heat labile and sensitive to heat so a proprietary method of cold processing has enabled the development of the Lyproflex range of products with Omega-3 series ETAs including high strength ETAs.

The anti-inflammatory potency of ETAs and GLM containing ETAs has been independently demonstrated. They act as anti-metabolites of Arachidonic Acid metabolism and are potent inhibitors of Cyclo-oxygenase 2 and the Lipoxygenase pathways.

Clinically, the efficacy of Lyproflex products has been demonstrated in veterinary use. In a recent trial.

Overall Efficacy
An overall 77% percent response within 4 weeks is in-line with previous reports in both medical and veterinary clinical reports. Lyproflex demonstrates potent anti-arthritic actions. Although this is an open study, the magnitude and range of horses and owner/managers contributing to the results indicate that the efficacy of Lyproflex Equine is real and substantial. Significant improvements in lameness have been demonstrated and reported by the comments of the owners. Substantial improvements in the Quality of Life of these animals and the satisfaction of ownership are apparent.

Arthritis Cases
Horses with a confirmed diagnosis of joint arthritis responded very well confirming similar results in medical studies. 80% of horses improving condition in 4 weeks and to such an extent that their ability to perform some degree of work substantially improves. Joint inflammation is typically mediated via both the Cyclo-oxygenase and Lipoxygenase pathways and providing Lyproflex with potent anti-inflammatory action. [see Figure 1 and Chart above.]

Concomitant Products
Perhaps the most intriguing results are the improvements Lyproflex Equine produces when used with horses already using products such as Bute or nutritional supplements. Owners reported subsequently that they are able to reduce the dosage of Bute and other supplements once stabilised by Lyproflex Equine.

In terms of supplements, the most widely used in this study were either Glucosamine/Chondroitin combinations.