

EQUINE SUPPLEMENTS

Assessing the US, Australian
and New Zealand Markets

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Ministry for Primary Industries
Manatū Ahu Matua



ECONOMIC INTELLIGENCE UNIT

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KEY FINDINGS

Note – All Figures In This Report Are \$US

Of those markets considered, the United States presents the largest purely on horse population alone....

Horse populations in New Zealand have continued to fall in the last 10 years, while both Australia and the United States continue to experience growth. The latter is by far the largest market with nearly 10.3 million horses concentrated mainly in California, Texas and Florida.

Equine Supplements can be broken into two groups: Nutritional or 'Feed Supplements' and 'Health Supplements'.

This work focused specifically on Joint Health Supplements to combat equine osteoarthritis – the most common of equine joint related diseases. Best estimates of market size from available evidence are:

POTENTIAL ANNUAL NUTRITIONAL OR FEED SUPPLEMENT MARKET SIZE

Country	Market Size	1%
United States	\$1,170m	\$11.7m
Australia	\$35m	\$350,000
New Zealand	\$7m	\$70,000

POTENTIAL ANNUAL JOINT HEALTH SUPPLEMENT MARKET SIZE

Country	Market Size	1%
United States	\$747m	\$7.47m
Australia	\$20m	\$200,000
New Zealand	\$3.6m	\$36,000

There are a number of products already on the US market place which use Green Lipped Mussel extracts.

Some highlight New Zealand provenance, but all highlight its anti-inflammatory properties. These products are amongst the most highly rated products when compared to other joint supplements.

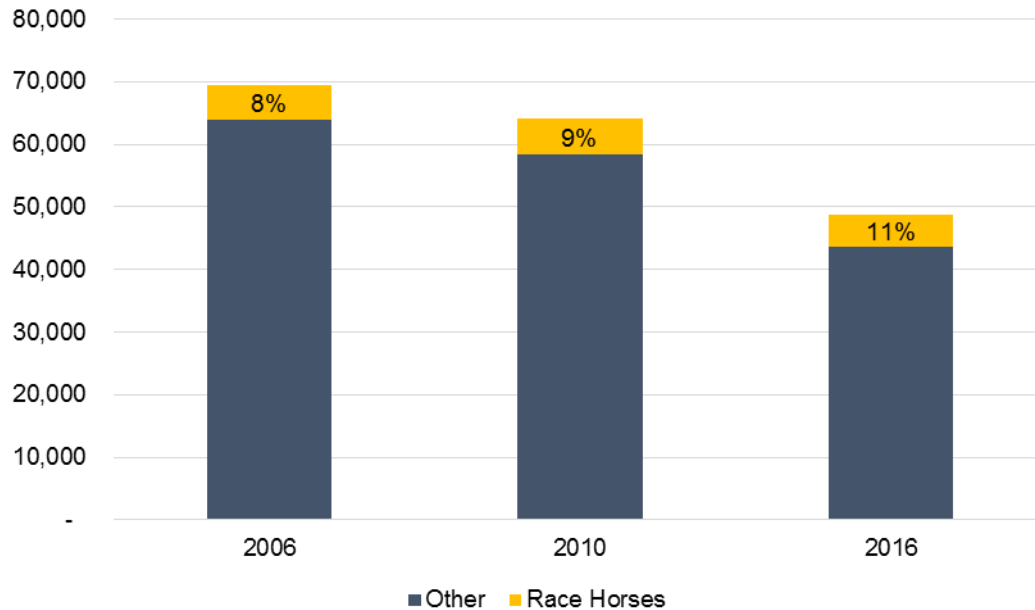
Academic studies in 2010 highlighted that a range of poor quality supplements had been made available to US consumers.

The US industry are taking steps to increase consumer awareness about the defining characteristics of a 'high quality' supplement through the seven-step ACCLAIM system (see page 12).

EQUINE POPULATION

New Zealand Horse Population

2006 - 2016

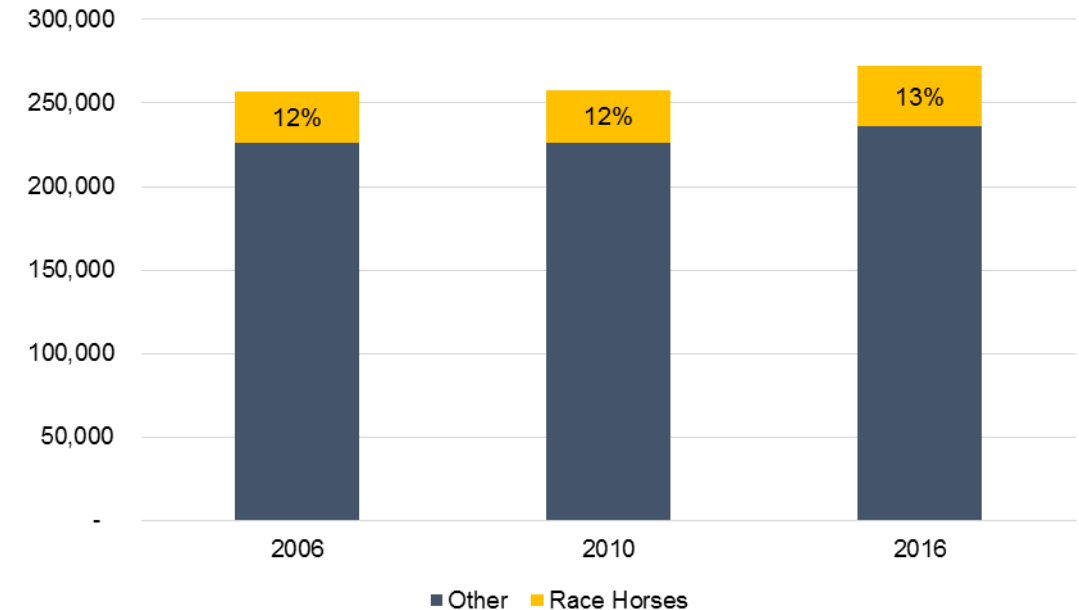


Source – Statistics New Zealand/MPI Agriculture Production Survey and New Zealand Racing Board

- According to official estimates, New Zealand's horse population has fallen by 30% over the last ten years.
- Secondary sources believe that the true population is likely much larger, with estimates back in 2012 closer to 120,000 (University of Waikato).
- Individual race horses registered with Racing New Zealand have fallen 8% over the same period.

Australian Horse Population

2006 - 2016



Source – FAO (OECD)

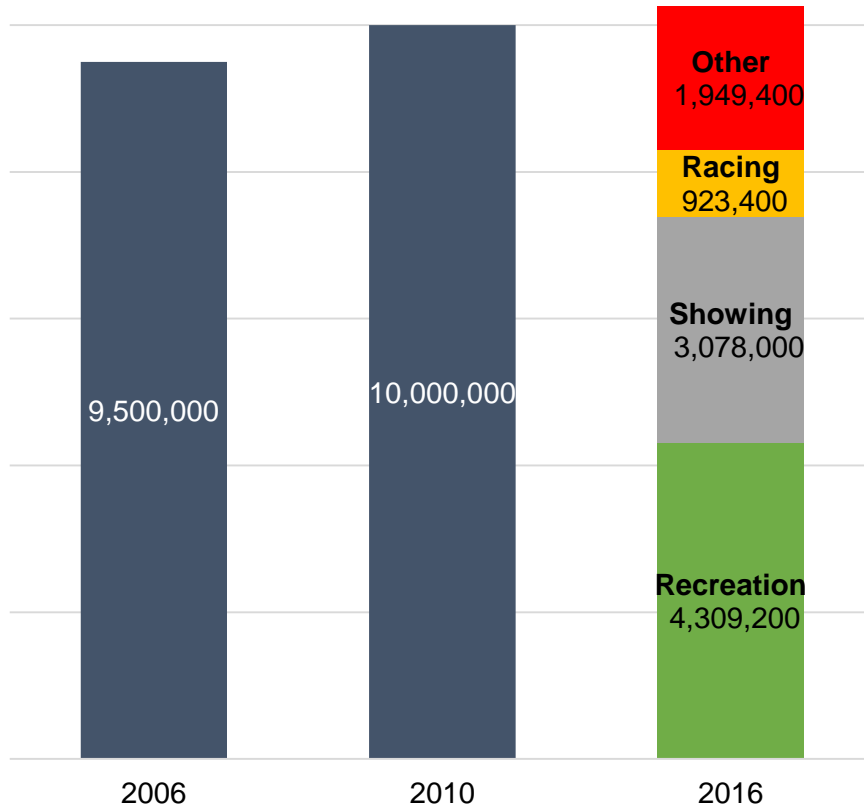
- Official statistics show that Australia's horse population has increased nearly 15,000 (6%) from 2006 to 2016.
- Over the same period individual race horses registered with Racing Australia increased by 15%.

EQUINE POPULATION ... Continued

United States Horse Population

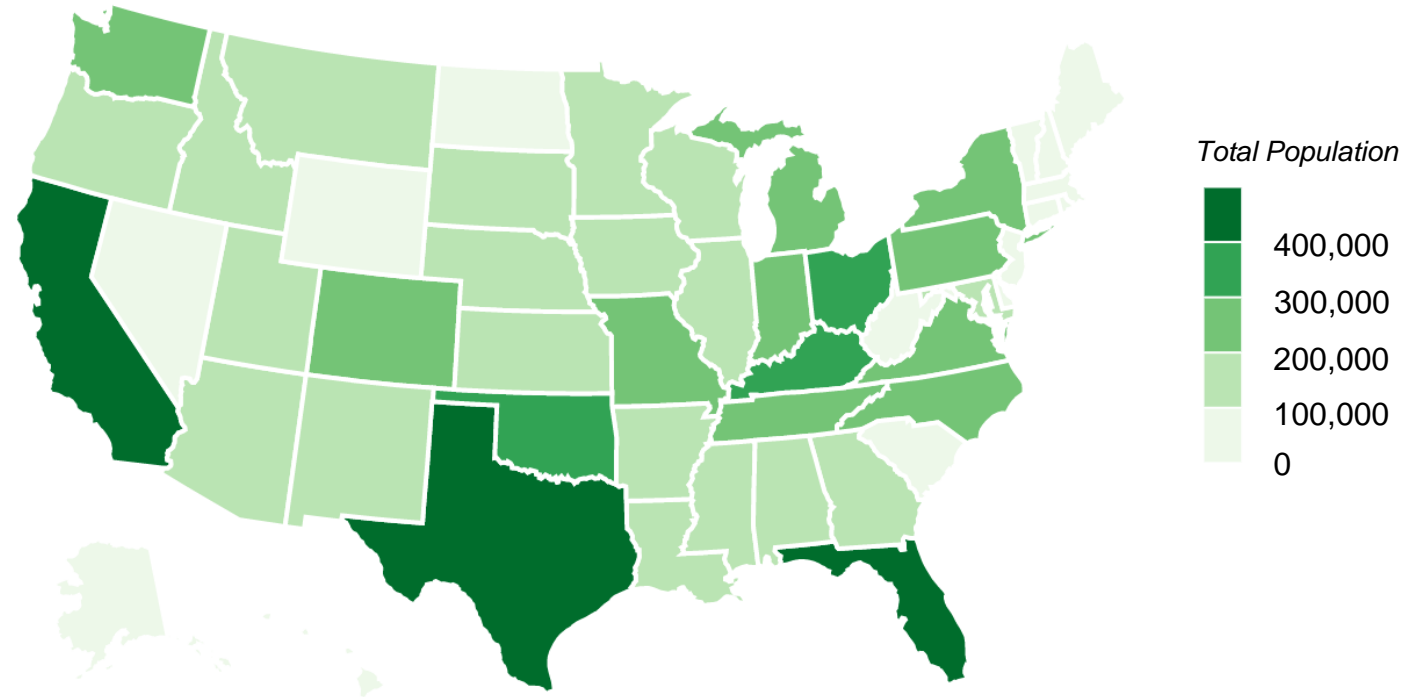
2006 - 2016 , Including Use Classification

Source – FAO (OECD)



United States Horse Population

By State, 2010



The US has the largest horse market of those being considered. Since 2006, the total number of horses owned has increased by more than 750,000 to nearly 10.3 million, owned by an estimated 1.8 million owners. Ownership is skewed towards owners of multiple race horses, where 9% of horses are owned by just 2% of horse owners.

EQUINE SUPPLEMENT TYPOLOGY

Study results have shown that more than half of all horse owners in the United States offer their horses some type of supplement. Those supplements typically fall into two categories:

NUTRITIONAL OR FEED SUPPLEMENTS

to meet a horse's needs when certain nutrients such as vitamins or minerals – are missing from the diet.

Example: A hay analysis has revealed that a horse's forage is deficient in certain vitamins and minerals necessary for basic bodily functions and optimum health. Feed supplements are used to fill the void.

HEALTH SUPPLEMENTS

to support maintenance of normal biological structure and function.

Example: An aging sport horse is showing early signs of osteoarthritis-associated discomfort, so a veterinarian recommends a joint-support supplement.

Other examples of health supplements include claims to support:

- Pain management;
- Gastrointestinal tract/ digestion (e.g., gastric ulcers, and sand colic);
- Anxiety/stress (i.e., calming supplements);
- Hoof health;
- Shiny, healthy hair coats;
- Respiratory health;
- Allergies;
- Metabolic issues;
- Energy;
- Anhidrosis; and,
- Insect control.



POTENTIAL FEED SUPPLEMENT EXPENDITURE

In 2010, Equine Canada surveyed horse owners to identify the average investment to maintain and keep a horse.

Taking into account inflation and exchange rates, an estimated budget for a 2016 horse owner is as follows.

Product or service	Racing	Breeding	Competition	Recreational
Hay	\$950	\$294	\$476	\$410
Horse Feed	\$923	\$189	\$243	\$166
Bedding	\$387	\$111	\$201	\$131
Feed Supplements	\$321	\$59	\$108	\$86
Grooming & Horse Care Products	\$197	\$40	\$87	\$95
Veterinary Services & Prescription Drugs	\$861	\$224	\$307	\$133
Farrier Services	\$542	\$92	\$291	\$281
Horse Dental Care	\$57	\$53	\$109	\$104
Horse Therapy	\$238	\$171	\$277	\$217
Total	\$4,477	\$1,233	\$2,099	\$1,622

UNITED STATES

Number of horses by use (2016)

Recreation	4,357,068 (42%)
Showing	3,032,225 (30%)
Racing	941,836 (9%)
Other	1,928,871 (19%)

Estimated feed supplement expenditure (2016) (USD)

\$375m
\$327m
\$302m
\$166m

Total	10,260,000	\$1,170m
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AUSTRALIA

Number of horses by use (2016)

Recreation	114,240 (42%)
Showing	81,600 (30%)
Racing	35,896 (13%)
Other	40,264

Estimated feed supplement expenditure (2016) (USD)

\$10m
\$9m
\$12m
\$4m

Total	272,000	\$35m
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NEW ZEALAND

Number of horses by use (2016)

Recreation	20,496 (42%)
Showing	14,640 (30%)
Racing	5,177 (11%)
Other	8,488

Estimated feed supplement expenditure (2016) (USD)

\$2m
\$2m
\$2m
\$1m

Total	48,801	\$7m
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MOST POPULAR FEED SUPPLEMENT PRODUCTS

Amazon.com, United States

Kentucky Performance Elevate Maintenance Powder Supplement For Horses

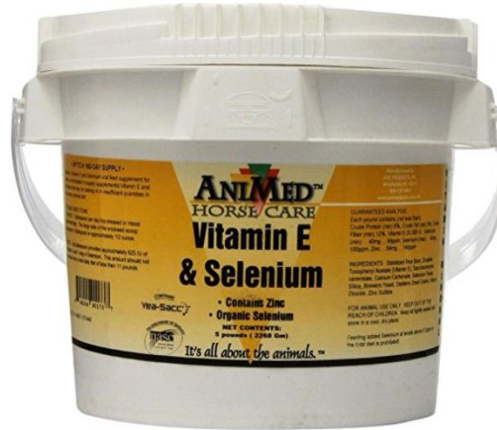


"I had a pony who was skin and bones. Nothing I did would put weight on him. After much bloodwork and testing it was determined that he was Vit E deficient. I also learned that there was a huge difference between Vit E and NATURAL Vit E. Don't throw your money away on buying non natural."

USD \$51.85 for 0.91 kg ★★★★★

- Elevate Maintenance Powder supplies your horse with a highly absorbable and readily available source of natural vitamin E that quickly provides necessary nutrients.
- Does not contain other vitamins or minerals. Horse owners can safely adjust the amount fed to support horses with high vitamin E requirements without worrying about causing imbalances.

AniMed Vitamin E and Selenium with Zinc



"Our Appaloosa mare was losing her mane. I talked with our vet, she said our areas soil was very poor in selenium, and before she did blood work she recommended a selenium supplement. The mares mane is back in great shape and no need for blood work."

USD \$30.89 for 2.26 kg ★★★★★

AniMed's Vitamin E and Selenium blend is formulated to supply the antioxidants vitamin E, selenium, yeast and zinc, which helps support a healthy immune system and may help protect the body's cells and tissues from free radicals.

Health-E Maximum Strength Vitamin E Veterinary Formula Nutritional Supplement



"In 6 months, our aged horse perked up, and walks, and runs, like a much younger horse. And his coat is much improved."

USD \$71.00 for 600g ★★★★★

- Helps provide maximum beneficial support to the immune system, liver, skin and hair.
- Helps with Neurological issues (Shivers, PSSM, EPM, EDM, motor neuron) as well as muscle soreness, tie-up and polysaccharide storage problems.
- Good for the Senior horse with poor immunity.
- Assists with Liver problems, Eye disorders, Dull, dry, damaged skin and coat.
- Helps build immunity to disease.

INTRODUCTION TO EQUINE OSTEOARTHRITIS

Equine osteoarthritis (OA) is a painful, debilitating joint disease with no known cure. It is characterized by heat, pain, swelling, crepitus (a crackling, crinkly, or grating feeling or sound under the skin), and a decreased range of motion in affected joints. This condition can develop suddenly (e.g., secondary to a traumatic injury to the joint), or it can develop slowly over the course of months to years.

Research conducted in the United States indicates more than 60% of equine lameness is attributable to OA, and it is widely accepted that OA can affect any horse at any age.

Once developed, OA slowly progresses for the remainder of the horse's life. Treatment invariably will be necessary at some point during an affected horse's life to manage pain and discomfort, control swelling, prolong the horse's athletic function (which can include competing or simply trail riding), and maximise lifespan.

Despite being a common problem there is limited research determining overall incidence and common causes of lameness in working, performance, and racing horses.

Since 2000 four studies have been conducted to ascertain rates of incidence and associated lameness in horses (see Annex 4 for summaries).

Considering these studies the likelihood of a horse developing joint related lameness and/or osteoarthritis is between **3.3% and 13.9% per annum in developing nations**. The wide range of incidence rates is attributable to low response rates and variable timing of samples.

At present, a multimodal treatment approach is advocated. This includes:

- Pain management via administration of non-steroidal **anti-inflammatory drugs** (NSAIDs) or corticosteroids;
- Intra-articular or Intra-muscular injections (e.g. hyaluronic acid, polysulfated glycosaminoglycans and polysulfated glycosaminoglycans);
- Weight management;
- Non-weight-bearing exercises (e.g., swimming) and physical therapy;
- Dietary modification (adding omega-3 fatty acids); and
- **Oral joint health supplements** (OJHSs) including glucosamine, chondroitin sulphate, methylsulfonylmethane (MSM), avocado/soybean unsaponifiable extracts (ASU), etc.



Marked new bone proliferation (arrow) in a horse with osteoarthritis of the carpometacarpal joint. 8

Courtesy of Dr. Matthew T. Brokken.

POTENTIAL ANNUAL SPEND ON JOINT SUPPLEMENTS

2016, US Dollars and 90% Confidence Interval

Estimates of equine direct medical expenditure indicate that horse owners spend between US \$1 and US \$4 per day on OJHS products. When combined with 2012 United States Department of Agriculture survey data, proportions of horse owner income bands can be used to calculate an estimated amount of annual spend on joint supplements.

NEW ZEALAND

Estimated number of horses with joint/osteoarthritis:

3,791 - 4,603

Estimated annual spend on joint supplements:

Low	<i>\$3.2m</i>
Mid-point	<i>\$3.6m</i>
High	<i>\$3.9m</i>

AUSTRALIA

Estimated number of horses with joint/osteoarthritis:

21,131 – 25,653

Estimated annual spend on joint supplements:

Low	<i>\$18.3m</i>
Mid-point	<i>\$20.0m</i>
High	<i>\$22.2m</i>

UNITED STATES

Estimated number of horses with joint/osteoarthritis:

797,079 – 967,641

Estimated annual spend on joint supplements:

Low	<i>\$692m</i>
Mid-point	<i>\$747m</i>
High	<i>\$840m</i>

MOST POPULAR OSJH PRODUCTS ON AMAZON

United States – with Green Lipped Mussel Extract

Technyflex Equine Premium Joint Supplement

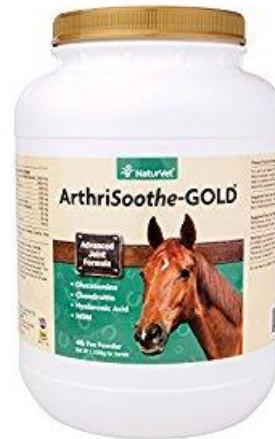


"From arthritic joints to uvetis in one eye, technyflex has brought him the comfort that other joint supplements failed to do!"

USD \$58.16 per 100g ★★★★★

- Relieves pain due to inflamed joints, arthritis, lameness, and joint injuries.
- Technyflex Equine is made from the **Green Lipped Mussel** (*Perna canaliculus*) that grows only in the **pure ocean waters of New Zealand**.
- This little shellfish has a unique combination of nutrients that have amazing anti-inflammatory properties.

NaturVet AthriSoothe- Gold Powder



"After being on another joint supplement that was not working, I decided to pay a bit more and try this one. I do not regret it"

USD \$65.37 per kg ★★★★★

- Advanced joint formula recommended to support **healthy joint function** and help alleviate aches and discomfort associated with daily exercise.
- Active Ingredients - Glucosamine Hydrochloride, Methylsulfonylmethane, Calcium Ascorbate (Vitamin C), Boswellia Serrata, Yucca Schidigera, Chondroitin Sulfate, **Green Lipped Mussel**, Hyaluronic Acid, Manganese Sulfate and dl-Alpha Tocopheryl (Vitamin E).

Cox Veterinary Acti Flex 4000 Joint Compound



"I highly recommend for any horse who is stiff or experiencing joint problems"

USD \$22.36 per litre ★★★★★

- Contains the key substances found to work together to help support the horse's natural ability to produce joint lubricating synovial fluid.
- Glucosamine Chondroitin Methylsulfonylmethane MSM *Perna Canaliculus* **Green Lipped Mussel** and Hyaluronic Acid are combined in our unique formula to **help promote joint health**.

MOST POPULAR OSJH PRODUCTS ON AMAZON

United States - without Green Lipped Mussel Extract

Ramard Total Joint Care

Equithrive Joint

Missing Link Equine Plus Formula



"Total Joint Care Performance - increased performance. Amazing!"



"This is the best joint supplement I've found, and I've tried them all"



"Very happy with my horses fast response."

USD \$140.96 per kg ★★★★★

USD \$125.54 per kg ★★★★★

USD \$28.78 per kg ★★★★★

- A highly-beneficial synergistic blend of the most powerful joint care products available.
- May reduce inflammation associated with everyday exercise.
- May reduce discomfort and stiffness associated with everyday exercise.
- Supports the entire joint; synovial fluid cartilage soft tissue tendons and ligaments.

- First equine product to contain a purified form of resveratrol.
- Reduces gene expression of inflammatory mediators.
- Relieves soreness.
- Equithrive Joint is a powdered product that can be administered with the horses daily feed ration.

- Glucosamine to support healthy joints and flexibility.
- Omega fatty acids help the absorption of fat soluble vitamins which nutritionally support: intercellular health, energy levels, the immune system, and muscle, tendon and ligament function.

WHAT THE EXPERTS LOOK FOR

A 2010 study showed that poor quality supplements are widely available to unsuspecting US consumers, including veterinarians. This has meant that recommending one or more products has been considered a clinical challenge.

Common complaints with poor supplement quality refer to products that:

- Do not contain the type or amount of ingredient listed on the manufacturer-generated product label.
- Recommend or result in administration of subtherapeutic doses of the nutritional supplement(s); and,
- Are potentially contaminated by harmful components (e.g., heavy metals or pesticides) or other nutritional supplements because of contaminated equipment during production.

The quality OJHS supplements (i.e. those which are safe, effective, and produced in a quality manner) are selected, stocked, and recommended to clients using the seven-step ACCLAIM system.

Table 1. Seven-Step ACCLAIM System for Identifying and Recommending a Quality OJHS

Variable	Description
A A name you recognize?	Is the product in question manufactured by a company you recognize? Products manufactured by established companies that provide educational materials for veterinarians and consumers are preferable to OJHSs manufactured by newly formed companies.
C Clinical experience	Companies who support clinical research and have their products tested in clinical trials for safety, efficacy, and bioavailability with results published in peer-reviewed journals are more likely to have a quality product. These publications should be readily accessible to veterinary practitioners, and companies should be able to provide copies of their published research for your review. Some manufacturers claim to have their product tested but are subsequently unable to provide data or a reprint for evaluation.
C Contents	All active and inactive ingredients and fillers should be indicated on the product label. Products that do not contain the amount of ingredients as listed on the product label likely contain other fillers or ingredients that are not identified and therefore may pose a potential health risk to the horse or the person administering the supplement.
L Label claims	If the claims sound too good to be true, they probably are. Supplements with realistic label claims based on scientific study results, rather than testimonials, are preferable. Illegal claims such as those claiming to diagnose, treat, cure, or prevent a disease are abundant. Products with illegal claims should be avoided.
A Administration recommendations	The amount of active ingredient administered per dose per day should be easily calculated. A product with some ingredients listed in milligrams and others in ounces but presenting the overall dosing instructions in scoops, without detailing amount of ingredients per scoop, are deliberately confusing. Look for products with clear administration recommendations with the recommended dosages based on published clinical trials.
I Ingredients	Products with a lot identification number or some other tracking system suggest that some form of pre- and/or post-market surveillance system to ensure product quality is in place. Companies that have voluntarily instituted current Good Manufacturing Practices (cGMPs) and other quality-control/quality-assurance techniques (e.g., tamper-resistant packaging and individual tablet/caplet identification) are more likely to be reputable. Producing a supplement akin to a pharmaceutical drug shows a long-term investment into their product and company.
M Manufacturer information	Manufacturer information should be clearly stated on the label, preferably in concert with contact information or a website for customer support. Companies employing veterinarians to answer technical questions/issues are preferred.

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