Q The supplement also provides natural sources of essential amino acids glutamine, natural silicon compounds and organic sulfur. Why?

A These nutrients have important roles in the structural formation and maintenance of blood capillary walls and interstitial layers in the air sacs of the lungs.

Q. How long does BCS have to be given to provide its nutritional benefit to "bleeders"?

Our extensive field studies indicate that BCS should be supplemented as directed for 3 weeks prior to commencing fast exercise in the lead up to a trial or regular racing. There appears to be no nutritional benefit obtained by supplementing horses that are resting. Horses that were supplemented immediately following a mild bleeding episode (blood in lower tracheal windpipe when scooped 6-12 hours after fast exercise or racing, or a "drip" from a nostril) were routinely given 3-4 weeks light work and concurrently treated with antibiotics and mucolytic agents to help reduce airway inflammatory reaction as blood was scavenged from the airways. The horses where given BCS to provide nutrients for airsac healing.

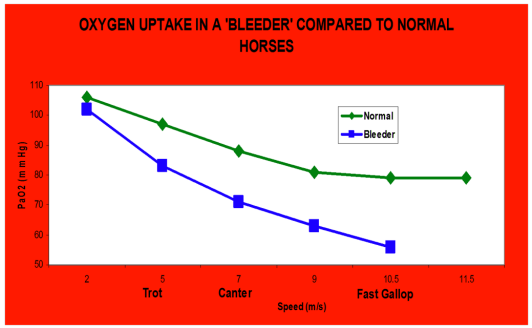
Follow-up results on mild cases indicated that 78% of horses managed in this way raced a minimum of 4 times without showing symptoms related to EIPH.

More severe bleeders were rested for 3 months and when training was resumed, they were supplemented with BCS for 3 weeks prior to racing with similar results, although some horses were medicated with inhaled bronchodilating drugs prior to racing.

All horses were not swum as part of their training routines and a modified interval training form of fast work was adopted once the horses were sufficiently fit to commence fast work.

Q Does BCS™ swab?

A No. **BCS™** contains only natural plant derived bioflavonoids, chelated trace-minerals, vitamins and selected branched chain amino acids.



Racing horses often suffer from bleeding in the lungs, which severely affects performance due to reduction in oxygen uptake. BCS™ was formulated and tested to help flexibility and strength of lung tissue in both bleeders and normal racehorses.

Q What pack sizes is BCS available in?

A **BCS™** is available in 1.0Kg (40 x 25g scoops)
2.5Kg (100x 25g scoops)

Manufactured in Australia

Manufactured to independently audited GMP quality control proccedures to Australian GMP code standards

Kohnke's Own®

8 Speedwell Place South Windsor NSW 2756

Tel: 1800 112 227

Website: www.kohnkesown.com

Email: info@kohnkesown.com

Kohnke's Own®

BCS™

Questions and Answers

BCS™

BCS™ is formulated to correct low or inadequate dietary levels of essential nutrients required for the maintenance of the structural resilience, strength and flexibility of collagen and elastic tissues in horses.

It has a role in the nutritional support of horses with EIPH ('lung bleeders') and tendon, joint and ligament injuries.

Fatigue failure is caused by repeated stretching and free radical damage to the fibres of the thin interstitial collagen layers sandwiched between the lung air sacs and pulmonary blood vessel walls in the lung air sacs.

This, combined with lung pulmonary artery blood pressures that reach 120-140 mmHg during fast exercise (or the psysical effort peaked during swimming), is considered to be the underlying reason for lung bleeding in racing and performance horses.

The nutrients in BCS™ have been selected to provide nutritional support to repair and to help maintain the flexibility, elasticity and strength of collagen tissue. In this way, BCS may have a role in physically preventing failure of the collagen tissue layers when stretched as the lung air sacs inflate up to 142 times per minute at the gallop in racing horses.

Erosion of the air sac lining cells by chronic lower airway infection and allergic inflammation, is also considered to be an underlying cause of Exercise-Induced Pulmonary Haemorrhage (EIPH) or 'bleeding' in fast gaited, athletic horses.

Q The formulation contains natural plant compounds and chelated trace-minerals. How do these nutrients help to maintain the structural integrity of collagen tissues?

A The major ingredients include plant bioflavonoids (hesperidin), organic trace-minerals and branched chain amino acids with glutamine, which provide nutritional compounds as essential structural components of collagen tissues, such as blood capillary walls and lung air sac tissues, as well as joint surfaces, tendons and ligaments.

Bioflavonoids, or proanthocyanidin complexes, have long been recognised as having antioxidant activity and free radical scavenging properties to protect cell membranes against uncontrolled lipid peroxidation.

During exercise at the gallop, volumes of between 2000 - 2250 litres of air are inhaled into the lungs, expanding the air sac (aveolar cell) walls to maximum stretch capacity. The perfusion of up to 70 litres of oxygen through the lipid rich layers of these cell walls, increases risk of oxidation which results in cell wall weakness and loss of integrity.

Bioflavonoids also have a biochemical function in inhibiting proteolytic enzyme action of collagenase, elastase and hyalurondase. In this way, they may have a role in inhibiting the destructive action on the extravascular matrix of interstitial collagen to help maintain the integrity of collagen, elastin and hyaluronic acid – important structural components of lung tissue.

Bioflavonoids may also have a beneficial role in blocking allergic activity in airways and enhancing the activity of T-lymphocytes and macrophage response in allergic and chronic lower airway infection and erosive disease common in racing horses.
They have been shown to have a role in enhancing the action of vitamin C in preventing blood cell and capillary fragility. They also have a synergistic action with vitamin A, vitamin E, vitamin B6 and zinc in the protection and maintenance of collagen.

Many grain and hay based diets fed to racing and sport horses contain low or inadequate levels of many key nutrients involved in maintaining health and optimum function of collagen fibres and interstitial tissues.

Q The formulation also contains Vitamin A and Vitamin E, as well as Vitamin B6 and Vitamin C. Why?

A Vitamin A has been shown to have a role as a nutrient in the structural integrity and maintenance of tendon and ligament tissue, as well as lung interstitial tissue to help it retain its flexibility and strength. Vitamin E is an important antioxidant in tissue cell walls and may also help to maintain structural integrity of lipid membranes in muscles and other cells. Vitamin B6 (pyridoxine) may assist the uptake of bioflavonoid complexes and the incorporation of glucosamine and glutamine into the structure of collagen. Vitamin C is involved, in conjunction with organic zinc, copper, manganese and other structural nutrients in **BCS™**, in the normal maintenance of collagen Type I tissue in the lungs, tendons and joint surfaces.

Q Is it recommended to supplement with BCS during a horse's full training program?

A **BCS™** is initially given at a higher rate of supplementation, then reduced to a daily maintenance level.

Horses 450-500 kg bodyweight

Initial Supplement: 1 scoopful (25g) into morning and evening feeds for 30 days.
Maintenance Supplement: 1 scoopful (25g) into feed once daily while horse is in training and resting

Pre-Race Dosage
Horses with history of lung bleeding can be given BCS prior to and after strenous exercise, such as a trial and a race.
Supplementary doses of 1 scoopful (25g) in each of the morning and evening feeds for the last 4 days prior to a trial or race, ceasing 24 hours prior to racing under the Rules of Racing, and commencing again at double doses for the 4 days after a trial or race.