

# Recent scientific breakthrough will benefit Thoroughbred Breeders and Trainers



Vitamin K may hold the key to reducing the incidence of bone defects that cost the Thoroughbred Industry world wide vast sums of money each year.

The protein osteocalcin, which is vitamin K-dependent, binds the mineral and protein in bone together. If there is insufficient vitamin K, the binding is incomplete, and low-density or defective bone and cartilage are produced. It has been known for several years that the correct form of vitamin K prevents and reverses osteoporosis, improves bone geometry and reduces incidence of stress fractures in humans.

NSW scientists Hubert Regtop and Ray Biffin and their associates, including Dr John Crowley, who recently presented their findings to a group of Equine Scientists at a Symposium on the Gold Coast, have demonstrated in trials that vitamin K has the same effects on bone in horses as it does in humans. Increased bone mineral density in young horses is linked to a reduction in dorsal metacarpal disease (shinsoreness) and reduced incidence of developmental orthopaedic disease.

Vitamin K was formerly thought to be only required in the body for normal coagulation of blood, for which the small amounts available in fresh leafy green vegetables and fresh pasture are sufficient. Vitamin K3, the synthetic form used to ensure normal clotting in intensive livestock supplements, unfortunately has no effect on osteocalcin and bone health.

Natural vitamin K (in fresh green leafy vegetables and actively growing pasture; and in butter from cows grazing fresh pasture) is highly unstable and is quickly degraded by sunlight or fluorescent lighting, so "wintered-off" pasture, hay, stored vegetables, or butter from grain-fed cows, are deficient. Parts of plants other than green living leaves (e.g. stalks or seeds or grain) contain virtually none.

The widespread belief that high quality fresh pasture grows the best horses now has a scientific explanation.

The challenge facing the researchers was to develop a process that both stabilised the vitamin K and improved its bio-availability. Their groundbreaking work resulted in the development of the compound Quinaquanone™, a combination of VK1 and VK2. (Phylloquinone & Menaquinone) Quinaquanone™ has been patented world wide and the resultant product will be available in Australia and sold internationally by Mitavite under the brand name Bonafide™.

Bonafide™ will be available in a paste, powder and as an additive in selected Mitavite feeds as soon as September this year.

The implications of this discovery are wide reaching. Australia is the home of two year old racing with huge prize money on offer and two year old winners often gaining immense value in the breeding barn or paddock. The wastage of two year olds in training from bone related injuries such as shin soreness is vast.

This coupled with the financial advantages of producing "clean" x-rays for inspection at the major yearling sales singles out this development as one of the most significant for the Thoroughbred Industry for many years.

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