

Holistic science in veterinary medicine, animal husbandry and management

TECHNICAL INFORMATION

VITAMINS

Definition: Any of a group of natural substances which are necessary in small amounts for the growth and good health of the body.

Casimir Funk a Polish-born American biochemist is credited with the discovery of vitamins, which he named in 1912. The term 'vitamin' is derived from 'vital amine' an amine being an organic compound of nitrogen.

There are many vitamins that have been identified since Funk's discovery and there are probably more to be discovered. Known as micronutrients (those required in small quantities) vitamins enable vital processes to occur in the body; if they are absent there are serious consequences for health.

Around three hundred years ago, sailors on long journeys often developed a much dreaded disease called scurvy. A British doctor found that a daily ration of lime juice would prevent the horrible softening and bleeding of organs, tendons, skin, and gums that led to death for sailors. British sailors got the nickname "limey" from this practice. Today, it is known that the sailors' scurvy was caused by vitamin C deficiency but this was not recognised until 1928.

'Vitamin C', as well as other chemical compounds generally known under the umbrella term 'vitamin', are regularly taken by people today in tablet form. In the case of 'Vitamin C', it is commonly straight ascorbic acid, which is not quite the same chemically as the true vitamin C, which prevented the limeys from getting scurvy. What is not generally realised is that natural vitamins are suites of chemicals having a complex synergistic activity and ascorbic acid represents only a part of vitamin C as it exists in nature. Ascorbic acid has been associated with toxicity and indigestion in some people.

Despite the fact that Ascorbic Acid is only a part of Vitamin C we are led to believe that it should be taken on a regular basis for a variety of reasons, such as to help in the prevention of the common cold. The vitamin manufacturing industry is now under intense scrutiny from consumer groups concerned about the necessity, effectiveness and long term safety of some of these artificial chemical substances some of which are routinely added to human and animal foods.

Certain synthetic chemicals of this sort, although useful in some ways, pose some problems in that they have only a fraction of the biological activity of the naturally occurring chemical compounds. They may perform some of the functions of their natural counterparts, but are less effective in others. These

manufactured substances, prepared from chemicals, are frequently less active biologically than their natural counterparts. They may also interfere with the body's uptake of natural vitamins.

Medical findings indicate that certain types of synthetic substances may cause reactions in chemically susceptible individuals. This is particularly relevant to individuals whose immune system has already been compromised through such factors as food intolerance. Interestingly, the same individuals can tolerate naturally derived vitamins.

Whilst modern nutritional science allows us to formulate foods to high standards it is a mistake to rely on high-tech processing and chemical formulae entirely. It is tempting to think that modern science has identified all the components necessary for a complete and healthy diet but this is far from the truth. The fact that we keep on discovering new chemical compounds in foods throws serious doubt on the modern approach to nutrition, which claims to understand the whole by breaking every thing down to its constituent parts. The flaws in this approach are illustrated in a famous experiment where the constituent parts of sea water were analysed by routine scientific methods. Artificial seawater was then created in a tank using distilled water, into which identical chemicals to those that had been identified as present in the seawater, had been added. To the astonishment of the observers, when certain types of sea fish were transferred into the tank from genuine seawater, they appeared distressed, and when they were returned to their previous environment, they immediately recovered.

Certain types of processing, types of raw materials, together with the distribution requirements of the pet food industry means that vitamins are commonly added to animal foods. This is a responsible attitude ensuring that the food is as good as it can be under the circumstances. There are, however different types of vitamins; entirely synthetic, which are usually straight synthetic chemical compounds and which can only replace a part of the natural vitamin; and those which are still manufactured but preserve the structure of the naturally occurring substances which make up the vitamin. To make it even more confusing, some are a mix of the two, which makes it a question of degree. There are now some manufacturers producing foods which do not contain any added vitamins at all, relying on the quality and type of the raw materials used.

Unfortunately it is difficult for the consumer to identify the type of vitamins in foods because, regardless of their source, they are all called vitamins; so usually the consumer has difficulty in making an informed choice. The BAHNM scheme for certified holistic products seeks to address these and other issues.

For free information on integrated nutrition and medicine and for advice in specific circumstances contact: tech.help@bahnm.org.uk

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