

Holistic science in veterinary medicine, animal husbandry and management

TECHNICAL INFORMATION

FUNCTIONAL FOODS

The difference between food and medicine is not always clear cut and the grey area between the two seems to be increasing as more is discovered about the way that certain chemicals in foodstuffs can affect the body. Scientific journals are now bulging with articles demonstrating the ability of particular foods or extracts of foods to prevent, sustain, or restore good health and shelves are groaning with a new generation of products which come under various descriptive terms, such as 'functional foods', 'organ specific nutrition', 'nutraceuticals', amongst others. Even plain porridge oats has been elevated to this new glamorous status and is now being marketed as being good for the heart.

The current regulatory framework, within which all manufacturers must work, has largely evolved to cater for *either* food *or* medicine and is not adequate for these newly contrived categories of products, which are being heavily marketed now both here and abroad. Some are entirely natural, such as unadulterated straight herbs and other vegetable and animal products, but others are not – being formulations of modern chemistry which often masquerade as natural. The same dynamics and associated legislative problems exist in the markets for both pet and human products. Issues concerning the consumer's perception and expectation of some of these products are worthy of airing in the light of Quality Control and Safety.

Clearly in many respects the existing legislation is woefully inadequate for some of these products, which are 'neither fish nor fowl' and which could leave the consumer confused and the animal in their care vulnerable. Equally the manufacturers rightly claim that they should be able to promote the benefits of their products and they don't have an appropriate regulatory framework – they are in a sort of 'no-man's land'. Until comparatively recently, things were much simpler, most medicines were relatively easy for the consumer to recognise because of their nature i.e. they had a 'medicinal use' and were usually chemical compounds – many were tablets or liquid preparations. Unlike food, medicines were (and still are) subjected to a rigorous licensing procedure which evaluated efficacy, safety and reliability. Now there are hundreds of different tablets and potions available in health food and pet shops claiming to have a beneficial effect on the body but are marketed in such a way that avoids making a 'medicinal claim' – these often escape some of the rigorous and comparatively expensive testing under the Medicines Act.

Once there is movement away from the traditional definition of medicines as above there is a huge range of products to consider. The problem is one of definition and categorisation and once started where you draw the line, if in fact it can be drawn? A particularly difficult area would be the many vegetable products which have been traditionally used for therapeutic as well as nutritional purposes – where do they fit? The definition of a medicinal product is not adequate or as straight forward as it once was.

A simple example which illustrates this difficulty is common or garden rhubarb. Although the leaves contain oxalic acid and are highly poisonous, the stems of rhubarb also go down very well with custard, as a pudding; as well as acting as a smart purge for severe constipation, the effect of course depending on the amount taken. So rhubarb has many characteristics. There are many plants like this which represented a kind of kitchen pharmacy in traditional cottage gardens, also known as a 'physic garden' in smarter homes, such as the one inhabited by the famous seventeenth century herbalist Culpeper. Culpeper, who was famous for producing one of the first books in English on herbal medicine, carrying on a tradition of knowledge handed down in an unbroken down from the ancients. Many of the plants he listed would be familiar to modern housewives but more for their culinary rather than their medicinal properties – of course the point is they could be used for both. Examples are garlic, fenugreek, ginger, comfrey and many others which, if overused, can produce some unpleasant side effects. Indigenous knowledge ensured they were generally safely used, but in its absence and in the wake of over-enthusiastic and irresponsible marketing, some have now been banned. This is not because they are highly dangerous but largely because in gross amounts there may be a risk in some circumstances and also because, unlike modern medicines they naturally vary in chemical content, no 'safe dose' can be set.

The regulatory issues raised by the introduction of legislation to control these types of products are staggering mainly because of the range of products which could be classified as 'functional'. For example, and to continue with the previous analogy – under the imaginary new legislation, how should rhubarb be sold? Should it be available freely in the supermarket as food along with cabbage and other vegetables? Should it carry a health warning because it can be toxic? Should it be sold as a medicine for constipation? What is the therapeutic dose? How much is safe? Is it safe to take during pregnancy? Is it safe to take with other medication?

Another category of functional foods on the market is 'nutraceuticals' which combines the word "nutrient" (a nourishing food or food component) with "pharmaceutical" (a drug). The word "nutraceutical" has been used to describe many dietary supplements sold for the treatment or prevention of disease. Whilst there is no legal definition of 'nutraceutical' most people in the industry agree that they are foods marketed as having a specific health benefit.

Nutraceuticals available as food supplements are often marketed under the 'natural' or 'holistic' banner, but many of them are neither. The usual mantra

from the manufacturers, when challenged about the nature of these products, is that although they are manufactured in a laboratory by chemical means, the molecule is 'nature identical' – a term which can be misleading. A distinction can be made here between nutraceuticals and straight herbs in that, whereas herbs are usually unadulterated and rely on traditional use, nutraceuticals are chemically formulated.

Typical uses of nutraceuticals are in the human food industry is the incorporation of mono or polyunsaturated fatty acids in spreads, which is associated with reducing the risk of heart disease. Another is the incorporation of gut friendly bacteria into yogurt drinks to aid digestion. Yet another is the fortification of cereals with calcium and vitamins aimed at building strong bones and immune system. The irony of all this is that most of these products would be unnecessary if our diets were healthy in the first place. It can be argued that the food industry itself has caused these problems with the overuse of by-products and chemical additives, too much salt, sugar and animal fats. All this of course is now cascading down into the pet food industry where the same principle exists in terms of causing a problem and then producing a product to 'cure it'. Like their owners, if pets ate according to the principals of nature i.e. mainly consumed food which they were evolved to eat, most chronic diet-related health problems would be reduced considerably.

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