



# DIETARY ANTIOXIDANTS

## FACT SHEET 31

### Introduction

We are increasingly hearing more and more about antioxidants and their role in contributing to good general health and their role in preventing disease. Despite this, few of us know exactly what antioxidants are and precisely how they interact with the body.

Antioxidants fall broadly into 2 classes:

- Dietary antioxidants which are used to help maintain general health.
- Chemical antioxidants such as Ethoxyquin, BHA and BHT. These are used in foods, including many dry pet foods, to prevent them from going rancid and to improve shelf life. Many of these have well documented side effects.

This fact sheet provides information on the health benefits of healthy dietary antioxidants and how Denes products can help maintain your pet's wellbeing. In contrast to many other companies, we do not add chemical antioxidants to any of our pet foods, preferring to use natural antioxidants to preserve our dry foods instead.

### Free radicals

Living organisms produce energy by a series of complex chemical reactions which involve oxygen. In doing so, harmful substances known as free radicals are produced. These are unstable and reactive molecules that can cause damage to the body. Free radicals attack individual cells in the body and are known to contribute to the development of many of the common health problems we see today. Within this list we can include arthritis, cataracts, heart disease, cancer, diabetes, various allergies and many of the effects of ageing.

In healthy animals, free radicals are controlled by a complicated system of enzymes and antioxidants which help prevent damage to the body. Stress, pollution, disease, poor diet and ageing can increase the production of free radicals, putting the natural system for removing them under stress. As an animal ages, this natural defence system starts to wear out so that cumulative damage to the cells of the body occurs. This eventually results in poor health and the appearance of disease symptoms.

### Antioxidants

Antioxidants mop up and destroy free radicals, effectively removing them from circulation and minimising the untoward effects they have on the body. Many scientific studies have backed up this fact and proved that antioxidants added to, or provided by the diet, have positive health benefits. Many natural supplements,

as well as vitamins, herbs, fresh fruit and vegetables, are good antioxidant sources.

#### Commonly used antioxidants

##### Vitamin A

Vitamin A is a fat-soluble vitamin that has a protective effect against some forms of cancer. It is present in liver, eggs and some dairy products, although the body can manufacture vitamin A from its precursor, beta carotene.

##### Vitamin C

As an antioxidant, vitamin C is extremely powerful and has a multitude of functions. It also helps to strengthen the immune system. Nearly all mammals (except humans and guinea pigs) are able to manufacture their own vitamin C, but supplementation is helpful in times of stress and in helping resolve some conditions. Vitamin C is used as a natural antioxidant in a number of our products.

##### Vitamin E

This vitamin is another powerful antioxidant. There are several forms of vitamin E, a term generally used to describe the 4 tocopherols synthesized naturally by plants.  $\alpha$  (Alpha) tocopherol is the most common and biologically active form. The effects of vitamin E are magnified when taken with other antioxidants, particularly vitamin C, selenium and beta carotene. One of its main spheres of action is in preventing heart disease and in relieving some of the effects of old age. Vitamin E, in the form of mixed tocopherols, is used as a natural antioxidant in some of our products.

##### Carotenoids

This class includes beta carotene, lutein and lycopene, which occur naturally in a number of fruits and vegetables, including carrots, spinach and tomatoes. They are known to help protect against some types of cancer and to strengthen the immune system.

##### Bioflavonoids

Approximately 5000 compounds are classed as bioflavonoids. These are natural antioxidants which occur in fruit, vegetables and in many herbs. Proven effects include benefits in treating allergies, arthritis, diabetes and viral infections. Of all the bioflavonoid antioxidants, one group has been shown to have a significantly more powerful antioxidant effect. This group, the proanthocyanidins or pycnogenols, are found in maritime pine bark and grape seed extract, as well as in grape skins.

##### Other antioxidants

Selenium, Co-enzyme Q10 and some amino acids also have antioxidant actions.

##### Antioxidants and Denes

Denes Wholegrain Baked Biscuits have enhanced levels of natural antioxidants derived from rosemary and tocopherol rich plant extracts. These dietary antioxidants will help reduce the number of free radicals circulating

around the body. Many of our herbal medicines, including our Garlic Tablets and Greenleaf Tablets also contain plant based antioxidants, present as part of the plant's natural constituents.

### Supplying dietary antioxidants

To work efficiently and to be effective, antioxidants need vitamins and minerals to be readily available. A good diet will provide most of these, but at times of stress, the body's demand will increase. By giving Denes All-in-One+ Powder, Greenleaf Tablets and Garlic Tablets on a regular basis you can be certain that there is always an adequate supply of these important nutrients available.

Ensuring that your cat or dog leads a healthy lifestyle will contribute to their general wellbeing. Regular exercise, minimal stress, adding natural supplements to the diet and feeding a diet free from chemical additives will reduce the number of free radicals produced.

All of our pet food recipes are produced using high quality ingredients and without the use of artificial ingredients. Using products such as our All-in-One+ Powder, Garlic Tablets and Greenleaf Tablets on a regular basis will serve to improve health by mopping up free radicals and by supporting the immune system in a general way.

If you have any queries concerning your pet's health or feeding problems, you can contact us for free pet care advice by:

- Visiting our website [www.denes.com](http://www.denes.com)
- Emailing us at [info@denes.com](mailto:info@denes.com)
- Calling us on 01273 325364 Mon-Fri, 9am – 12Noon
- Writing to us at:  
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