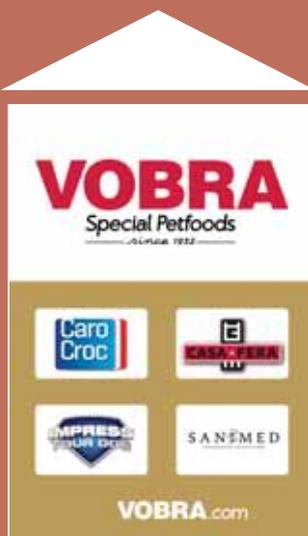




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# Superfruit-positioned Dog Foods

*Superfruits, a subcategory of superfoods, are portrayed as fruits with outstanding health-promoting properties that are linked to their composition. The term superfruit is not regulated and can be applied as a marketing tool to any fruit. Superfruits in the human food market have made their way to pre-processed components of kibbled and canned pet food.*

*Pet food superfruit ingredients include pomegranate, avocado, pumpkin, cranberry and blueberry. The addition may be highlighted on the packaging or websites. The words pumpkin, cranberry and blueberry form part of the product name of certain pet foods. The name of a pet food brand features part of the word pomegranate and another one displays a shortening of avocado.*

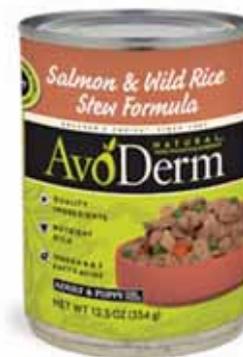
*Superfruit is lauded for being packed with vitamins. As a constituent of complete and balanced pet food this is not relevant. These formulae, by definition meet the all nutrient needs of dogs with ample safety margins. For superfruit in pet food, the prefix 'super' is appropriate only if the inclusion has a proven health-promoting effect in dogs. This requires that the fruit possesses biological activity, which survives the processing steps, and is present in the food at an effective level.*

*Pet foods may not make explicit health claims on their superfruit accessory, but ride the wave of the aliment's popularity. Avocado flesh meal and oil, which lack a known, specific active principle, are purported to enhance skin and hair coat health. Powdered pomegranate seeds, dry pureed pumpkin and dried cranberries and blueberries are recommended as source of antioxidants. Claimed health benefits comprise supporting immune action, urinary tract, memory function and cardiovascular system. These assertions cannot be substantiated by research data in dogs.*

## Avocado

Avocados have a thick skin and a single seed, comprising about one third of total fruit weight. Putative avocado poisoning in two dogs has been reported (1). Toxicity may reside in the leaves from the avocado tree and the fruit's pit. The US Animal Poison Control Center expects that avocado fruit meal or oil present in commercial pet foods does not pose a hazard to dogs.

The edible portion of avocado fruit contains about 70 percent water. Apart from delivering a variety of essential



nutrients, the dry matter accommodates more than 50 percent fat which is rich in phytosterols and carotenoids (2). As yet there is no evidence that a complete food with added avocado will improve dogs' skin and coat health.

A mixture of non-saponifiable lipids extracted from avocado and soybeans is marketed for human joint health. Oral administration of such mixtures affected canine joint metabolism in model studies (3-5). It is unknown whether avocado non-saponifiables reduce clinical signs in dogs with naturally occurring osteoarthritis. D-mannoheptulose is a seven-carbon sugar found in avocados, but no dog food applications have been identified (6).

## Pomegranate

The inside of pomegranate fruit holds clusters of arils ranging in colour from

white to deep red and containing white seeds that are surrounded by juicy pulp. A product line covers dry and canned foods and treats, all with added dried, powdered pomegranate seeds. The ingredient lists of the dry dog foods declare amounts of 5-7 percent. Polyphenolic ellagitannins in pomegranate seeds are accredited free-radical scavenging activity that protects body cells.

It is uncertain whether antioxidant activity in the dog's body will be increased after consumption of food with pomegranate and whether this has perceivable health effects. Ellagitannins have low bioavailability while their metabolites, including ellagic acid, have lost their free-radical scavenging activity (7). This explains why in-vitro findings often do not match results of in-vivo studies (7).

Intravenous administration of pure ellagic acid to dogs induced blood



hypercoagulability (8). Based on published in-vitro and rodent studies, a cancer-fighting food bar for dogs has been patented (9). The bar would enclose natural ellagitannins as anticarcinogens. Dry pomegranate seeds bear 18 percent oil with 65 percent punicic acid, a conjugated linolenic acid (C18:3 n-5). Pomegranate seed oil in the diet of genetically obese rats did not affect gain of body weight and fat (10).

## Pumpkin

Pumpkin fruits have a thick shell formed around the pulp and seeds. They are produced by plants in the squash family and come in an assortment of colours and size. Pumpkin is rich in antioxidants in



the form of carotenoids, such as beta-cryptoxanthin, and flavanoids, such as myricetin. These compounds have possible health effects (11-13), but there are no published studies in dogs.

Dogs fed a dry food mixed with a wet, pumpkin-based supplement consumed less energy during the second, time-restricted meal that was supplied three hours after the first (14). The mixture tended to induce more weight loss during energy-restricted feeding. The dry food equivalently diluted with water served as control diet. The supplement was more than just pumpkin so that the fruit's impact remains unexplored.

## Blueberries and cranberries

Blueberries and cranberries are believed to elicit potential health benefits through their resveratrol component (15, 16). The fruits have been marginally evaluated in dogs. Blueberries in the diet tended to elevate antioxidant status in dogs (17). In a study without placebo treatment, six dogs with recurrent urinary tract infection did not relapse within six months after oral administration of cranberry extract, while urine from dosed healthy dogs impaired bacterial adhesion to isolated kidney cells (18).

List of references is available on request from the author (beynen@freeler.nl)

Dr Anton C Beynen writes this exclusive column on dog and cat nutrition every month. He is affiliated with Vobra Special Petfoods.

