

Add NatuRose® — for the health of it.

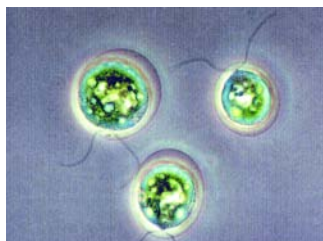
Enhance your chow

NatuRose® Natural Astaxanthin is an algae meal produced from the algae, *Haematococcus pluvialis*. This pure microalgae meal, cultivated in a pristine environment using the tropical sunshine of Hawaii, can be added to your feeds as a unique source of astaxanthin, a powerful anti-oxidant. Differentiate your feeds the natural way, with microalgae.

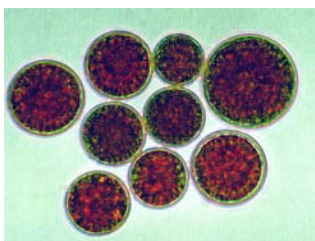
NatuRose® Natural Astaxanthin — pure, natural, nutritional.

Microalgae, one celled plants that live in water, are the nutrient producers of the aquatic world. As such, they present us with an opportunity to harness a concentrated nutrient source to enhance our lives and the lives of our pets. This particular algae, *Haematococcus pluvialis*, produces large amounts of astaxanthin. Astaxanthin has been found to improve longevity as well as contribute to a healthy immune system and reproduction.

Haematococcus pluvialis



Free-swimming chlorophyte



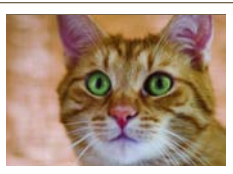
Encysted cells with high levels of astaxanthin

The science behind astaxanthin

Astaxanthin has been shown to be stronger than many of the well known antioxidants, such as vitamin E and beta-carotene, in both oxygen free radical scavenging and singlet oxygen quenching (Fig. 1).

Eighty six percent of the total carotenoids found in NatuRose® Natural Astaxanthin are esterified astaxanthin (Fig. 3). Esterification, or association with fatty acids, improves the singlet oxygen quenching ability of the astaxanthin (Fig. 2). Fatty acids, such as linoleic, oleic, palmitic and linolenic, are present in high concentrations. In addition, other value-added nutrients are also present, such as amino acids, vitamins and minerals. (Fig. 4)

Astaxanthin — the secret to improved pet health



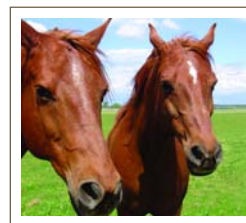
NatuRose® Natural Astaxanthin improves the quality of life for pets by contributing to a healthy antioxidant balance. The esterified astaxanthin from *Haematococcus* algae has demonstrated bioavailability in dogs and cats (Chew et al. 2004).

Benefits to dogs, cats and horses

NatuRose® has been found to improve the health, longevity and immunity of these species. It is beneficial for breeding animals as it has been shown to increase sperm quality and volume as well as litter sizes and number of live births. It is especially valuable for race animals such as horses and sled dogs, improving both endurance and performance as well as enhancing joint and muscle recovery after exercise.

Astaxanthin from this algae meal has been shown to:

- Enhance cell mediated and humoral immune response in dogs and cats (Chew et al 2004; Chew and Park 2004)
- Improve longevity (Cotman et al 2002)
- Improve endurance/muscle function (Lignell 2001, Sidebottom et al 2004)
- Improve breeding (Hansen et al 2001, Lignell and Inbarr 2000)
- Protect cells from the effects of oxidizing radicals (Chew et al 2004)
- Decrease acute phase proteins and lipid peroxidation (Chew et al. 2004)



Antioxidants have been found to:

- Slow the rate of cognitive decline (Milgram et al. 2002, Zicker 2005)
- Reduce cellular DNA damage associated with aging (Cotman et al. 2002, Milgram et al. 2002, Dall'Ara 2003)
- Decrease DNA oxidation and increase resistance of lipoprotein particles to in vitro oxidation during prolonged vigorous exercise (Basking et al. 2000)

Specially formulated for feed manufacturers

NatuRose® is a dried powder standardized to 1.5% astaxanthin making it simple to use in feed applications. It is easily mixed into pelleted and extruded feeds before pelleting. The product can also be mixed with a vegetable oil and used to top-coat pellets. Breeders or specialty pet owners can use a vegetable oil mixture or simply add the dry powder directly to their pet's food.

World leader in microalgae technology

Cyanotech Corporation's production facility is located on the coast of Kailua-Kona, Hawaii. We cultivate high value microalgae species in an environmentally responsible (sustainable) manner. Nothing could be more pure and natural than nutrients from microalgae grown in these pristine conditions.



Differentiate your feeds

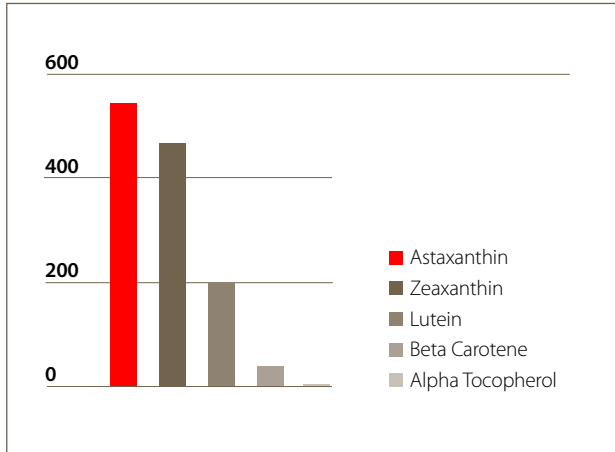
For more information or for a sample of product to try, contact us at (808) 334-9402 or visit www.naturrose.net.

NatuRose
Natural Astaxanthin®

Cyanotech World Leader in Microalgae Technology

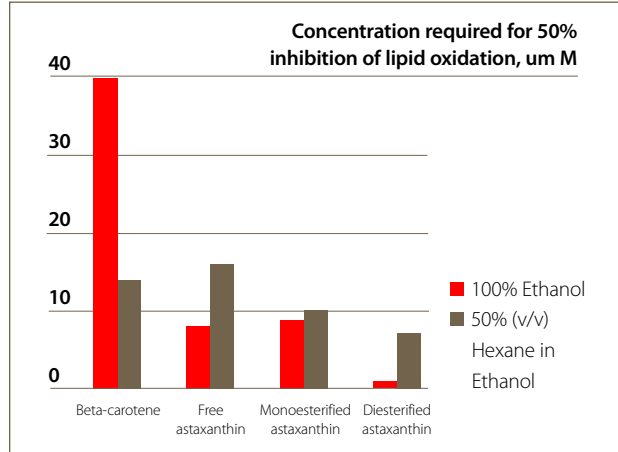
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Fig. 1 Relative singlet oxygen quenching



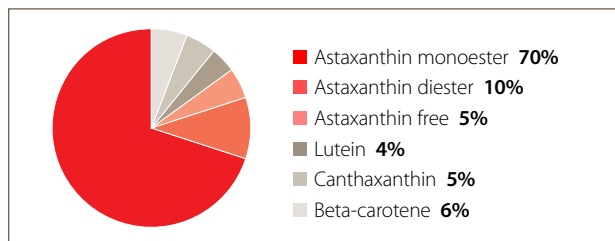
Source: Adapted from Shmidzu, 1996

Fig. 2 Singlet oxygen quenching of astaxanthin from *Haematococcus pluvialis*



Source: Kobayashi and Sakamoto, 1999

Fig. 3 Carotenoid complex of NatuRose®



Source: Cyanotech Corporation



Fig. 4 NatuRose® Typical Analysis per 100 grams algae meal

| Astaxanthin 1.5% | | Amino Acids, g/100 g | | Fatty Acids, mg/100 g | | Vitamins, mg/100 g | |
|----------------------------|--------------|----------------------|-----|-----------------------|---------|-------------------------------|-----------|
| General Composition | | Aspartic Acid | 2.0 | 12:0 Lauric | 9.7 | Biotin | 69,100.0 |
| Carbohydrate | 50.7% | Threonine | 1.1 | 14:0 Myristic | 67.0 | Folic Acid | 799,000.0 |
| Protein | 24.2% | Serine | 1.1 | 15:0 Pentadecanoic | 80.0 | Niacin | 7.0 |
| Fat | 11.5% | Glutamic Acid | 2.4 | 16:0 Palmitic | 2,316.7 | Pantothenic Acid | 2.7 |
| Ash | 8.6% | Proline | 1.1 | 16:1 Palmitoleic | 127.0 | B1, Thiamine | 1.0 |
| Moisture | 5.0% | Glycine | 1.3 | 17:0 Heptadecanoic | 24.7 | B2, Riboflavin | 2.0 |
| | | Alanine | 1.9 | 17:1 Heptadecenoic | 5.0 | Pyridoxine | 0.8 |
| | | Cystine | 2.5 | 18:0 Stearic | 142.0 | C | 13.4 |
| | | Valine | 1.4 | 18:1T Elaidic | 52.7 | E, natural, IU/100 g | 19.4 |
| Fiber | 18.5% | Methionine | 0.4 | 18:1 Oleic | 2,723.3 | Betacarotene | 102.5 |
| | | Isoleucine | 0.9 | 18:2 Linoleic | 2,663.3 | A, from Betacarotene, IU/100g | 171,000.0 |
| | | Leucine | 2.0 | 18:3 Linolenic | 2,036.7 | Minerals, mg/100 g | |
| | | Tyrosine | 0.7 | 18:3G Gamma Linolenic | 179.7 | Calcium | 344.00 |
| | | Phenylalanine | 1.1 | 20:0 Arachidic | 43.7 | Copper | 0.87 |
| | | Histidine | 0.4 | 20:1 Eicosenioc | 19.7 | Iron | 334.33 |
| | | Lysine | 1.3 | 20:2 Eicosadienoic | 5.23 | Magnesium | 547.00 |
| | | Arginine | 1.2 | 20:3 Eicosatrienoic | 10.3 | Manganese | 6.72 |
| | | Tryptophan | 0.4 | 20:5 Eicosapentaenoic | 107.3 | Phosphorus | 596.67 |
| | | | | 22:0 Behenic | 31.7 | Potassium | 295.33 |
| | | | | 22:6 Docosahexaenoic | 8.0 | Sodium | 96.10 |
| | | | | 24:0 Lignoceric | 20.7 | Zinc | 34.20 |
| | | | | Omega 3 | 2,160.0 | Arsenic | 0.08 |
| | | | | Omega 6 | 2,983.3 | Cadmium | 0.007 |
| | | | | | | Lead | 0.15 |
| | | | | | | Mercury | 0.006 |