

C-QAS

NUTRITIONAL SUPPLEMENT IN ORAL SOLUTION

1. COMPOSITION

Each ml contains: vitamin C (ascorbic acid)
200 mg.

2. DESCRIPTION

C-QAS 20 % is a nutritional supplement consisting in a solution of vitamins C for use in drinking water. **C-QAS 20 %** contributes to the well-being of the animal and the maintenance of the levels of vitamins necessary for the good development of the animal, including young, convalescence, weak or orphan animals. **C-QAS 20 %** boosts the immune system of the animal giving better chances to the animal for recovering from situations as transport, vaccination, diseases or extreme weather conditions stressing on vitamin C re-imbalance and supplementation. **C-QAS 20 %** prevents deficiency of vitamin C and prevents cellular damage including copper-induced damage in erythrocytes.

Vitamin C: Vitamin C is a potent reducing agent. Related to this oxidation-reduction (redox) potential, two major functions of vitamin C are as an antioxidant and as an enzyme cofactor. Even in small amounts vitamin C can protect indispensable molecules in the body, such as proteins, lipids, carbohydrates, and nucleic acids (DNA and RNA), from damage by free radicals and reactive oxygen species that are generated during normal metabolism, by active immune cells, and through exposure to toxins and

pollutants (e.g., certain chemotherapy drugs). Vitamin C also participates in redox recycling of other important antioxidants as vitamin E from its oxidized form.

Vitamin C's role as a cofactor is also related to its redox potential. By maintaining enzyme-bound metals in their reduced forms, vitamin C assists mixed-function oxidases in the synthesis of several critical biomolecules.

Symptoms of vitamin C deficiency, such as poor wound healing and lethargy, result from impairment of these enzymatic reactions and insufficient collagen, carnitine, and catecholamine synthesis. Vitamin C increases the bioavailability of iron from foods by enhancing intestinal absorption of non-heme iron.

Vitamin C has been shown to stimulate both the production and function of leukocytes, especially neutrophils, lymphocytes, and phagocytes. Specific measures of functions stimulated by vitamin C include cellular motility, chemotaxis, and phagocytosis. Neutrophils, mononuclear phagocytes, and lymphocytes accumulate vitamin C to high concentrations, which can protect these cell types from oxidative damage. In response to invading microorganisms, phagocytic leukocytes release non-specific toxins, such as superoxide radicals, hypochlorous acid, and peroxynitrite; these reactive oxygen species kill pathogens and, in the process, can damage the leukocytes themselves. Vitamin C, through



SUPER'S DIANA, S.L.
08150 Parets del Vallès
(Barcelona), SPAIN
Tel. +34 93 8437536
www.supersdiana.com



Poultry & Livestock Solutions
Office: Opp. King Mall, Near
Wapda Town, G.T.Road
Gujranwala, Pakistan
Phone: +92 55 4284177-88

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its antioxidant functions, has been shown to protect leukocytes from self-inflicted oxidative damage. Phagocytic leukocytes also produce and release cytokines, including interferons, which have antiviral activity. Supplementation of vitamin C to the diet has a beneficial effect for protection against infectious bursal disease, malabsorption syndrome, adenovirus infections, chicken anaemia agent, mycotoxins, or coccidiosis.

3. RECOMMENDED USE

- Prevention or treatment of vitamin C deficiencies in farm animals, including increased disease incidence.
- Convalescence
- Improve the immune response.
- Prevention against copper-induced damage in erythrocyte and liver of broiler chickens.
- Prevention against infectious bursal disease, malabsorption syndrome, adenovirus infections, chicken anaemia agent, mycotoxins or coccidiosis.
- Prevention and treatment of stress caused by vaccination, diseases, transport, high humidity, high temperatures or extreme temperature changes.

4. CONTRAINDICATIONS

None described.

5. ADVERSE EFFECTS

None described.

6. SPECIAL PRECAUTIONS

None described.

7. ADMINISTRATION

Oral solution for administration in drinking water.

- Poultry: Add 1 ml per 10 litres drinking water for 3 to 5 days.
- Calves and cows, goats and sheep: 1 ml/50 kg bw for 3 to 5 days.

8. TARGET SPECIES

Cattle, sheep, goats and poultry.

9. WITHDRAWAL PERIOD

Zero days.

10. STORAGE CONDITIONS

Store below 30 °C.

Protect from light.

11. SIZES

1 L or 5 L



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