

Water soluble electrolytes and vitamin C for re-hydrating heat stressed animals, for boosting during illness or recover, or if experiencing fever, high temperature, or any activity where the body temperature is higher than normal and for a prolonged period. Aqualyte-forte must be administered for a minimum of 2 days

**Horses:**

Foals to yearlings and endurance horses in training:

Blend 100 grams per 150 litres of cool drinking water.

Mature Horses: Blend 100 grams per 200 litres of cool drinking water.

**Dry powder application**, 4g per feeding ration, horse must have free access to clean fresh water.

# AQUALYTE-FORTE

Water soluble electrolytes and vitamin C for re-hydrating heat stressed animals

Registration No V18289 Act 36/1947

## This Product Is Suitable For The Following Animals:

- Horses
- Pigs
- Chickens
- Cattle
- Sheep
- Goats



## COMPOSITION PER KG:

<b>Potassium</b>	40 000 mg
<b>Sodium</b>	46 000 mg
<b>Magnesium</b>	1 200 mg
<b>Copper</b>	3 000 mg
<b>Zinc</b>	4 000 mg
<b>Manganese</b>	120 mg
<b>Vitamin C</b>	150 000 mg
<b>Citric Acid</b>	q.s.

## ELECTROLYTES AND HEAT STRESS

Electrolytes are compounds that dissolve into cations (positive) and anions (negative) in solution. All livestock have definite requirements for these elements in the correct amounts for homeostasis known as dietary electrolytes balance.

Just as all essential nutrients such as amino acids vitamins and oxygen need to be continually supplied to production livestock. so do these minerals.

When temperatures exceed 25°C livestock suffer from heat stress. In severe cases the deep body temperature rises animal cells are elected and production performance drop.

When the relative humidity greater than 50%the situation is even worse

Animals typically respond by eating less feed and increasing respiratory rate by which there is heat loss by evaporation of water from the lungs.

For water to move across cell membranes (to release heat from the body) there is an essential requirement for electrolytes. The electrolytes are "used up" in the pathway of heat loss and need to be endogenously (by feed or water) replaced, or else no further heat release can take place. Because feed intake is already reduced and the body does not need more internal heat production via feed intake and digestion, the most practical way to achieve electrolyte intake is via the drinking water.

In warm climates, excessive hot days can happen very quickly and without warning.

An animal thus needs an available source of electrolytes that can rapidly be absorbed in the intestines.

Most inorganic forms electrolytes have variable levels of effectiveness, due to the variance in the bio-availability of these minerals for the animal (bio-availability can be as low as 30% for some mineral sources).

Some of the inorganic electrolytes can also be in an "insoluble complex form which thus do not supply an immediate dietary source.

By means of relatively new technology, extreme high bio-available organic electrolytes (in excess of 80% bio-available soluble minerals) can now be supplied to animals.

What is meant by bio-availability?

It is the part of the metal which is ingested, absorbed, then transported onto the site of action and finally converted into a physiological active form.

Aqualyte-forte contains pure mineral and amino acid complexes.

## AQUALYTE-FORTE

The "speed" and effectiveness of electrolyte uptake is greatly improved with pure ions and a single amino acid complex.

The electrolytes used are 100% soluble, highly stable and are produced with a reaction of the smallest amino acid, Glycine.

Absorbability is clearly demonstrated by means of Caco-2 cells done by the University of Zurich, Caco-2 cells are basically sample cells of the small intestine (site where absorption of electrolytes takes place) that are electrostatic 'alive' and functional cells

In the laboratory, different electrolyte sources are then used to see which have the highest absorption rates and the relative times taken for absorption.

The glycine-mineral complexes clearly show superior absorption.

**This is ideal for the use in electrolyte therapy for a number of important reasons:**

- **The amount of total electrolytes required or fed is now less (improved bio-availability).**
- **This reduces the "waste fraction" of insoluble minerals which are a nuisance factor, as they interfere with the absorption of other important nutrients.**
- **The rate of electrolyte uptake is rapid. Ideal for days with sudden intense heat and related heat stress.**
- **This source of electrolytes is 100% soluble making them ideal for quick drinking water treatment.**

There are numerous published research papers that show evidence of the effect of ascorbic acid with heat stress.

In summary ascorbic acid assists with the regulation of hormones which counter heat stress. During heat stress animals respond by releasing adrenal medullary hormones. Neural catecholamines and corticosterone in an effort to mobilise energy to alleviate heat stress.

This creates an increased demand for ascorbic acid for the production of these adrenal hormones necessary for energy production.

Although certain animal species are able to produce their own ascorbic acid during times of prolonged and excessive heat stress these "internal sources" are rapidly depleted.

The supply of ascorbic acid in the feed or water is then essential to counter total physiological collapse and eventual mortality.

By combining essential electrolytes and ascorbic acid, Aqualyte-forte offers an effective management tool for livestock owners to counter the detrimental effects of heat stress.

### APPLICATION/DOSE

#### Aqualyte-forte must be administered for a minimum of 2 days

**Horses:** Foals to yearlings and endurance horses in training: Blend 100 grams per 150 litres of cool drinking water.

Mature Horses: Blend 100 grams per 200 litres of cool drinking water.

**Dry powder application,** 4g per feeding ration.

**Poultry and Ostriches:** Day old chicks to 7 days: Blend 100 grams per 150 litres of cool drinking water. From 7 days in adult birds: Blend 100 grams per 200 litres of cool drinking water.

**Pigs, Sheep and Goats:** Blend 100 grams per 200 litres of cool drinking water.

**Cattle:** Blend 100 grams per 250 litres of cool drinking water.

