



# BEYERS CONDITION & CARE

## RECOVERY



## AMINO ACIDS AND VITAMINS

### Protein needs or amino acid needs?

Proteins are the body's building materials.

Depending on their function in the body, proteins can be classed as structural components of feathers and cell walls - for building up muscles, enzymes and hormones - for the optimum function of the immune system - to transport components in the bloodstream etc.

Proteins are made up of amino acids: essential, non-essential and semi-essential. The body is unable to produce essential amino acids. They therefore have to be provided in the diet (pigeon mixtures or supplements).

A biologically complete protein contains all essential amino acids in sufficient quantity to satisfy pigeons' protein needs. In sufficient quantity such that pigeons do not form a reserve of amino acids and there must be a limiting amino acid, that is which is least present in the diet and which therefore determines how much "new" protein can be formed (cf. Liebig's minimum ton).

The following amino acids are found in pigeons' crop milk: tryptophan, methionine, phenylalanine, isoleucine, arginine, leucine and lysine.

The limiting essential amino acids for pigeons are lysine, methionine, tryptophan and arginine. Grain and seed mixtures may sometimes contain too little methionine and lysine. More of these essential amino acids can be added via a supplement, thus improving the quality of a protein source used, rather than trying to compensate for the deficiency by using more of the "poorer" quality protein source.

### Vitamins: the more, the better?

Vitamins are vital organic substances which are required only in small quantities in the body. They all have their own specific function and are needed to build up enzymes and co-enzymes.

Vitamins cannot be produced by the body itself and have to be absorbed through diet.

A pigeon's daily vitamin requirements may well increase if extra efforts are called for (during the breeding, moulting or racing seasons), after illness (in the case of diarrhoea, gastroenteritis) or after medication is administered.

The vitamins that play a role in the (fat) metabolism and (fat) burning are sometimes called the sport vitamins (B vitamins, vitamin E and biotin). Vitamins that support build-up and resistance are called breeding or moulting vitamins (vitamin A, vitamin C, and some B vitamins). Since vitamins are essential for metabolism, they have to be administered daily, preferably from natural sources (high-quality grain mixtures or brewer's yeast) or through well-balanced supplements (above all the B vitamins) in accordance with the recommended dose.



## AMIN-VITA

COMPLEX OF ALL ESSENTIAL AMINO ACIDS AND VITAMINS.

- Contains all essential amino acids (arginine, phenylalanine, histidine, isoleucine, leucine, lysine, methionine, threonine, tryptophan and valine), as well as a broad range of vitamins (A-D3-E-B1-B2-B3-B5-B6-B12-C-K3-PP-choline and biotin).
- To get pigeons into top shape.
- During moulting when the need for amino acids and sulphur-containing amino acid methionine is highest, because of the development of new feathers.

**Instructions:** 30 ml / 2 l of drinking water or 1 kg feed

- During racing season: 2 x per week
- During moulting season: 1 x per week

