

# Annatto

## COLOURING AND NUTRITION



### Annatto / Origin and Description

The heart-shaped seeds of the capsule fruit of the Bixa Orellana or also Orleans shrub are called Annatto. Annatto is a carotenoid with oil-soluble compounds Bixin and the water-soluble compound Norbixin. This dual occurrence in terms of solubility is very rare in carotenoids. The importance of the annatto has increased, as there is an increasing demand for natural dyes.

### Annatto/ Use

Annatto is used in particular for dyeing cheese (cheddar, etc.), dairy products, meat and in the beverage industry. Annatto is also used as a lipstick colour in the cosmetics industry. But also in body packs and body creams, due to its high proportion of tocotrienols, which are very well absorbed through the skin. Annatto is also used in the pharmaceutical industry and as a dietary supplement.

### Annatto/ Laying hen food & Pigment

In a Brazilian study\* Annatto was used in laying hen feed. This study showed that a desired pigment net value of 9 can be achieved with the addition of Annatto if not fed with maize but with more favorable sorghum. The use of annatto did not affect the following parameters: feed intake, egg weight, feed conversion, etc. With the addition of 1% annatto, the egg yolk colour could be brought to the desired level, comparable to maize feeding. The heart-shaped seeds of the capsule fruit of the Bixa Orellana or Orleans shrub are called annatto. Annatto is a carotenoid with the oil-soluble compounds Bixin and the water-soluble compound Norbixin. This dual occurrence in terms of solubility is very rare in carotenoids. The importance of the annatto has increased, as there is an increasing demand for natural colourants.

# NAURAL COLOURING OF EGG YOLKS BY ANNATTO INCREASE THE NUTRITIONAL VALUES

## **Annatto / Vitamin E**

Annatto is the only known plant that is very rich in tocotrienols and does not contain alpha-tocopherol. The vitamin E content is divided into the following tocotrienols: Delta-tocotrienol : 53,67 - 93,51 %, gamma-tocotrienol : 1,09 - 37,32 %, alpha-tocotrienol : 0,00 - 16,72 %, alpha-tocopherol is better bioavailable, but even small amounts of tocotrienol have many health effects. If alpha-tocopherol and tocotrienols are added, alpha-tocopherol is bound and thus reduces the absorption of tocotrienol. What is special about Annatto is that it does not contain alpha-tocopherol.

## **Annatto & Health**

Tocotrienols reduce LDL cholesterol as they have cholesterol biosynthesis inhibitory effects (3-hydroxy-menthylglutaryl coenzyme a reductase)°.

Tocotrienols are strongly anti-oxidative. Numerous studies prove a significant effect against arteriosclerosis. If alpha-tocopherol and tocotrienols are added, alpha-tocopherol is bound and thus reduces the absorption of tocotrienol. The special thing about Annatto is that it does not contain alpha-tocopherol.

## **Annatto & Laying hen /**

### **Cholesterol reducing effect**

Delta-tocotrienol has been shown to have a very significant cholesterol biosynthesis inhibitory effect. This was significantly detectable in chicken serum and parts of chicken meat. In humans, this is exploited and extracted from annatto delta-tocotrienol for preperates. In the effect chain "feed -> chicken -> egg" the effect of lowering the cholesterol content is present in a reduced degree (according to studies 4-16% °). Annatto reduces the cholesterol content\*\* in egg yolk, but not as much as in blood serum. It also improves the nutrition of egg yolk through its high vitamin E content. In particular by T3. It increases the iron and carotene content and their availability.



## **Annatto & Nutrition of chicken meat**

Tocotrienols reduce LDL cholesterol as they have cholesterol biosynthesis inhibitory effects (3-hydroxy-menthylglutaryl coenzym a reductase)<sup>°</sup>. Tocotrienols are strongly antioxidative. Numerous studies prove a significant effect against arteriosclerosis. If alpha-tocopherol and tocotrienols are added, alpha-tocopherol is bound and thus reduces the absorption of tocotrienol. What is special about Annatto is that it does not contain alpha-tocopherol.

## **Annatto/ Economy**

It makes sense to feed with Annatto from both, a nutritional and an economic point of view. This is particularly the case when keeping the animals indoors or when, for economic reasons, less maize or other feed rich in xanthophyllene or carotenoids is to be used. A small one. The addition of annatto already leads to a strong pigmentation of the egg yolk. The taste and nutritional values also improve. According to studies, the administration of annatto also results in a considerable improvement in meat quality.