



Develop of different hybrid varieties of maize which produce high amounts of antioxidants to use on feed to hens (and poultry, in general)



BUSSINESS OPORTUNITY

Technology available for licensing

IP STATUS

Spanish patent granted
(ES201531699B1)

TAGS

Egg Nutritional Quality, Yolk Color, Feed Hens and Poultry, Carotenoids and Ketocarotenoids

LITERATURE CITED

- C. Zhu et al (2008) Proc Natl Acad Sci USA 105: 18232-18237; doi: [10.1073/pnas.0809737105](https://doi.org/10.1073/pnas.0809737105)
- JA Moreno et al., (under review).

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NEW METHOD TO INCREASE EGG NUTRITIONAL QUALITY AND YOLK COLOR

SUMMARY

Hens raised on feed based on the optimized maize varieties produce high quality eggs, in particular, lay eggs with an intense golden yolk when compared to diets complemented with commercial nutritional additives.

Eggs accumulate high-content of carotenoids and ketocarotenoids (astaxanthine). These eggs might have a better acceptance by consumers due to strongly pigmented yolks and healthier nutritional composition. In addition, they may also find use in high value specialty processed foods and as novel ingredients.

THE NEED

Hens (and poultry, in general) cannot synthesize carotenoids, and these have to be provided through the feed. Commercial feed does not attain the color standards required by consumers and/or specialty food manufacturers. Thus, egg producers have to complement feed with pigment additives from other sources, increasing the cost of production.

Consumers and the specialized high value food industry have specific preferences for yolk color and enhanced nutritional quality of food products.

MARKET

The total demand for animal products in developing countries is expected to more than double by 2030. Egg consumption in China alone is very high, more than double the average for developing countries and even above the industrial country average.

China, USA, Japan and India are the top world egg producers and 80% of worldwide production is led by USA and Asia, while Europe represents 16% of the global market.

ADVANTAGES

- › Cheaper than commercial supplements.
- › Higher levels of carotenoids and ketocarotenoids (astaxanthin) in eggs.
- › Higher consumer acceptance by carotenoid load in yolk (DSM scale 12).

APPLICATIONS

Feed for hens/other animals with high nutritional requirements of carotenoids and ketocarotenoids.

LEVEL OF DEVELOPMENT

Concept validation.