



Do you still use choline chloride in your feed production?

Discover a solution capable
of transforming your results!



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nuprox[®]

BioCholine®

The natural revolution to increase animal profitability and performance

BioCholine® is not only a total replacement for choline chloride, it is an alternative that exceeds expectations in terms of performance, energy efficiency and sustainability. With over 20 years of application and an extensive list of scientific publications, **BioCholine®** is the intelligent choice of producers looking to maximize results without compromising animal health or the environment.



Why replace choline chloride with **BioCholine®**?

1 Industrial benefits

Forget the problems and consequences of hygroscopicity: it is the end of premix caking, reduce excess *carriers* by reducing premix volume, stocks and transports and thus increasing your competitiveness, reduce crusting in mixers and eliminate vitamin degradation. With **BioCholine®** you can now include your choline source in the premix without fear and eliminate a problematic ingredient from your finished feed.

2 Performance and health benefits

BioCholine® complements the choline present in cereals in an intelligent way, having its greatest potency precisely in the function where cereal choline or choline chloride are less effective: energy metabolism, which makes it the ingredient of choice when we think of a complementary and complete supplementation.

By stimulating metabolic pathways, **BioCholine®** increases lipid utilization (oxidation and gluconeogenesis), increasing the amount of metabolizable energy available for animal growth and performance. This effect is reflected in GP, GPI, reproductive parameters, etc.

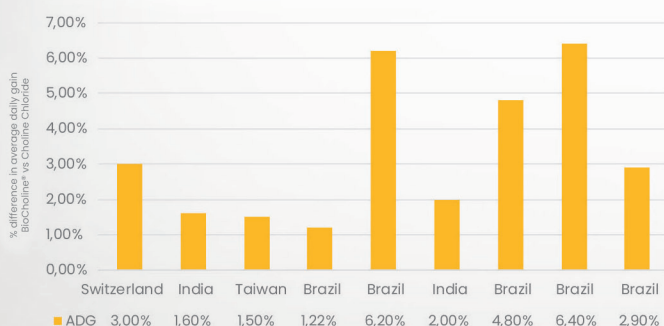
By increasing lipid utilization, **BioCholine®** can be applied in a specific protocol to reduce fat deposition in the liver and abdominal cavity of poultry and in the subcutaneous tissue of pigs, avoiding chronic problems resulting from excessive deposition, and potentially improving profitability at the slaughterhouse.

By excluding choline chloride, we reduce the intake of the chlorine in diets, which reduces the likelihood of metabolic problems resulting from its excess.

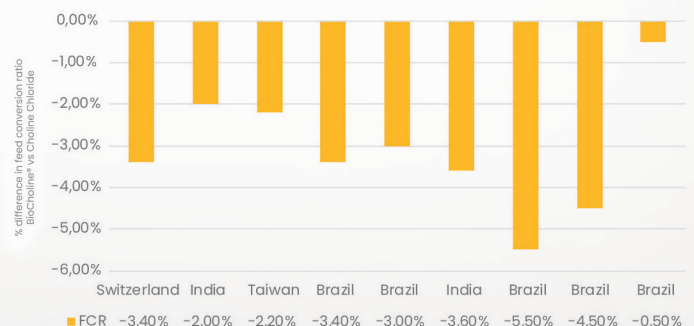
Effect on performance when substituting choline chloride

Historical differences in weight gain and feed conversion ratio between different supplementation levels with **BioCholine®** and choline chloride:

Historical data on average daily gain of broilers supplemented with BioCholine® vs. Choline Chloride in different studies



Historical data on feed conversion rate of broilers supplemented with BioCholine® vs. Choline Chloride in different studies

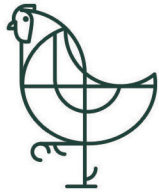


3 Benefit in carcass composition

If applied in a specific protocol, **BioCholine®** can significantly modulate the carcass composition of poultry and pigs. → Thus, less fat is deposited and more energy is available for muscle development.

- ✓ Up to -2.8 mm of backfat in pigs
- ✓ Up to +10% spine depth
- ✓ Up to +4.2% % of meat in carcasses
- ✓ Up to -16% amount of fat in liver
- ✓ Up to -20% relative weight of abdominal fat
- ✓ Up to -9% relative liver weight
- ✓ Up to 100% reduction of fatty liver syndrome

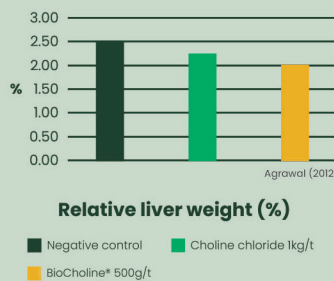
Effect on energy distribution



Poultry

Less fat deposition in the liver and abdomen, lower incidence of fatty liver and more energy available for muscle development.

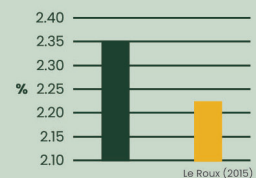
Relative abdominal fat weight at 42 days
India 2012



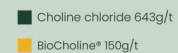
Relative liver weight (%)



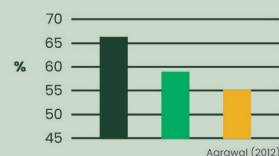
Relative abdominal fat weight at 35 days (1:4.84)
France 2015



Relative liver weight (%)



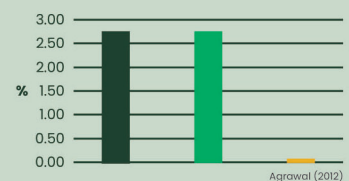
Liver fat (m/g) at 42 days
India 2012



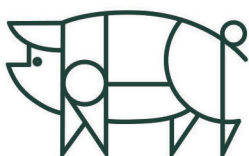
Liver fat (m/g)



Incidence of fatty liver (%) up to 42 days
India 2012



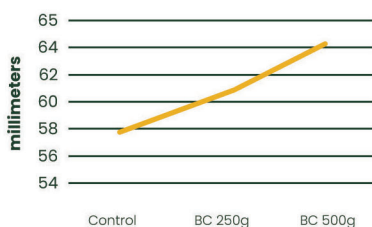
Relative liver weight (%)



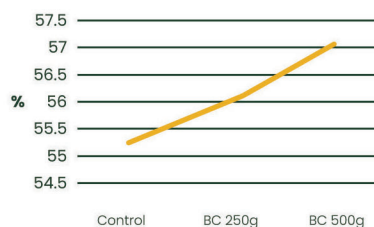
Pigs

Lower subcutaneous fat deposition which means leaner carcasses, greater energy availability for muscle development and higher percentage of meat in carcasses with higher yield of cuts.

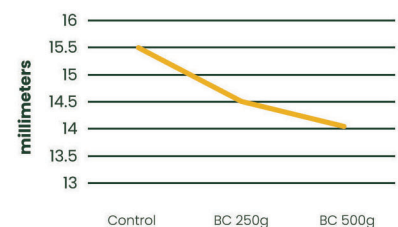
Depth of loin



% Carcass meat



Back fat



BioCholine®

Natural, innovative
and proven to be effective

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4 Cost-effective formula

With **BioCholine®**, fat deposition in the carcass is reduced and converted into energy for muscle growth and development. The amount of metabolizable energy available is known and this value can save energy in the formulation of poultry diets, thereby reducing their cost.

Since **BioCholine®** acts in certain metabolic pathways, i.e. after nutrient absorption, it does not compete for substrates with enzymes and emulsifiers, and may even have a complementary or synergistic effect with these additives.

If you use bicarbonate to balance sodium with a lower chlorine content, by using **BioCholine®** you can reduce its inclusion, increasing common salt and thus reducing costs.

In addition, the inclusion of **BioCholine®** is more economical than that of choline chloride. This is due to its high potency, which comes from the synergy between several phytocatives, resulting in low inclusion doses. Each kg of **BioCholine®** is equivalent to 4.84 kg of 60% choline chloride.



5 Environment

For every ton of **BioCholine®** applied, we stop using almost 5 tons of petroleum derivatives from a chemical industry. Instead, we use a 100% natural product derived from carbon-fixing plants.

Are you ready to take your production to the next level?

Discover how **BioCholine®** can transform your bottom line and make your animal nutrition more efficient and sustainable.



**Request a sample or talk
to our technical team:**
products@nuprox.ch



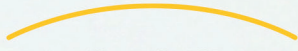
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