



Betafin[®] natural betaine

BENEFICIAL FEATURES AND ADVANTAGES

Betafin[®] natural betaine

Provides feed cost savings, increased profit and more energy for growth

	FEATURES	ADVANTAGES	BENEFITS
Features and functionality	Methyl group donor	→ Spares some added methionine and choline as methyl donors	→ Lower feed costs
	Osmolyte	→ Protects against the physiological effects of production stress	→ Sparing metabolic energy can improve productive performance and carcass lean deposition Maintains gut integrity
	Odour free and palatable	→ Readily accepted by animals	→ Multi-species applications Maintains feed intake
Acceptability	No residues such as hydrochloric acid (HCl), trimethylamine (TMA), dimethylamine (DMA) or monochloroacetic acid (MCA)	→ Minimizes any potential health and safety concerns → Non-corrosive for equipment Very low chloride content	→ Taint-free meat and eggs – better quality end product readily accepted by customers Add to premixes and use at the mill with confidence
Consistency and quality	200°C heat stable	→ Suitable for the majority of feed forms and manufacturing processes	→ Confidence in use. Full efficacy after processing leading to growth and feed conversion benefits
	Highly water soluble (Betafin [®] BT natural betaine)	→ Easy use for drinking water applications	→ Rapid osmolytic benefits in stressed livestock
	Stable in premix	→ No degradation of vitamin and mineral quality compared with choline chloride	→ Better premix vitamin stability for improved performance
	Contains consistently high levels of pure betaine	→ Betaine concentration up to 97%	→ Economical in costs, time and sourcing
Value added services	Betacheck [®] proprietary software	→ Specific matrix values	→ Confidence in use for methyl sparing giving lower feed costs
	Research and development	→ Unrivalled independent field based research	→ Reliability and reassurance
	Customer support	→ Tailored applications expertise	→ Advice from our technical and business teams to maximize value



Betafin® natural betaine for excellent animal productivity

Betafin® natural betaine can offer greater net value in use than either synthetic anhydrous betaine or synthetic betaine-HCl products.

Improve productive performance

- Betafin® natural betaine improved broiler performance compared with diets containing no betaine or betaine-HCl.

Maintain gut integrity at times of production stress

Coccidiosis and heat stress negatively affect gut structure and function leading to reduced animal performance.

Coccidiosis challenge

Betafin® natural betaine

- Improved amino acid and energy digestibility
- Reduced gut lesion scores and increased gut tensile strength compared with betaine-HCl

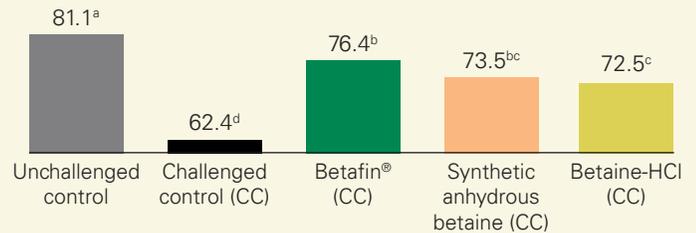
Heat stress

- Betafin® natural betaine improved broiler performance compared with synthetic products under heat stress conditions

In vitro intestinal cell model

- Betafin® natural betaine increased water holding capacity of broiler intestinal tissue exposed *in vitro* to hyperosmotic conditions compared with betaine-HCl
- Betafin® natural betaine increased cellular ATP content compared with betaine-HCl
- Betafin® natural betaine positively influenced the gut barrier and cellular ATP content compared with betaine-HCl in an *in vitro* intestinal cell model

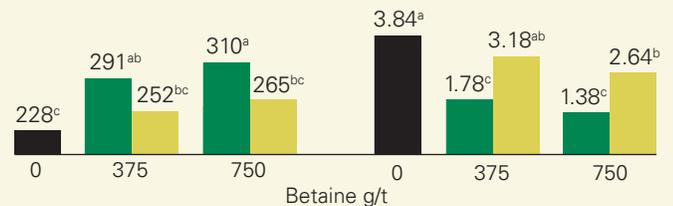
Betafin® natural betaine significantly (P<0.05) improved average amino acid digestibility during coccidial challenge in broilers



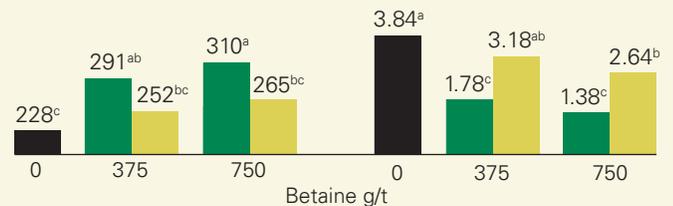
Challenged control - reduced methionine (CC)

^{a-d} values without a common superscript are significantly different (P<0.05)
Technical report: Betafin.NZ.B.13.54

Gut tensile strength of coccidia-challenged broilers (grams force/mm intestine)

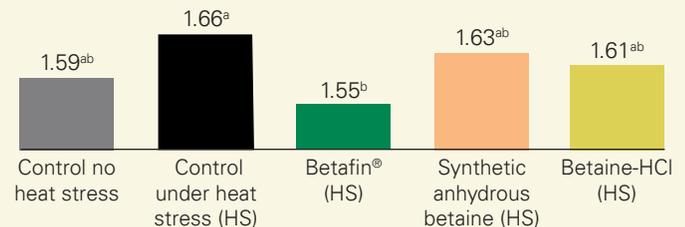


Gut lesion scores of coccidia-challenged broilers



^{a-c} P<0.05
Reference: Colorado Quality Research, USA
Technical report: Betafin.B.USA.99.31

Betafin® natural betaine significantly (P<0.05) improved FCRc during heat stress in broilers



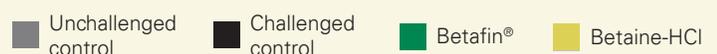
^{ab} values without a common superscript are significantly different (P<0.05)
Technical report Betafin.NZ.B.13.55

In vitro intestinal cell model showed betaine-HCl negatively influenced the gut barrier of cells compared to Betafin® natural betaine



Betaine-HCl significantly (P<0.001) decreased TEER-value

TEER – Transepithelial electrical resistance
Technical report: Betafin.FIN.LAB.13.53



Supporting services for Betafin® natural betaine

- Betacheck® software to calculate the accurate replacement of methionine and choline with Betafin® natural betaine without risk to broiler performance.
- Reassurance and reliability from high quality supporting research and development of Betafin® natural betaine. Over 100 technical reports from independent research organisations.
- Applications expertise of our technical and business support teams.

References supporting Betafin® natural betaine:

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Product form and application

Betafin® natural betaine is a multi-species feed additive ideal for mash or pelleted animal feeds or drinking water applications.

Product application

Dry (crystalline) Betafin® natural betaine – for in-feed applications.

Available in different grades (S1, S4 and S6) according to humidity conditions during storage.

Packed in 25 kg polyethylene lined multi-wall paper bags and 650 kg or 800 kg polyethylene lined polypropylene big bags with bottom valve.

Recommended usage rate up to 2 kg/tonne (0.2%) of finished feed.

Dry (crystalline) Betafin® BT natural betaine – for drinking water applications.

Packed in 25 kg polyethylene lined multi-wall paper bags. Recommended usage rates available on request.

Liquid Betafin® natural betaine – for in-feed applications.

Available in bulk.

Recommended usage rate up to 4 kg/tonne (0.4%) of finished feed.

Contact your Danisco Animal Nutrition representative or distributor for recommendations about your specific application needs

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