





Verdad® N16

Nature's choice for label-friendly *Listeria* control



-  Consumer-friendly labeling
-  *Listeria* control
-  No sodium contribution
-  Lower use levels

Verdad N16

Verdad N16 is a natural ferment derived from carefully selected food cultures. This truly unique blend of cultured corn sugar and vinegar includes organic acids, sugars and peptides. The neutral pH of Verdad N16 make it ideal for Ready-to-Eat meat and poultry products.

Consumer-friendly labeling

Today, consumers are carefully checking food product labels. This is especially true when buying meat and poultry, where authentic products are highly desired. As shoppers become more aware of the ingredients included in meat products, they look for ingredients they know and trust. Verdad N16 is labeled as “cultured corn sugar and vinegar”.

Listeria control

Verdad N16 is specifically designed to offer food safety by controlling the growth of *Listeria*. It inhibits the growth of *Listeria* in cured meats up to 120 days. Verdad N16 is a label friendly alternative to well known lactate/di-acetate containing preservatives.

No sodium contribution

Verdad N16 is a potassium based ingredient and will have no sodium contribution to the final formulation. This makes Verdad N16 ideal for use in low sodium formulations.

Lower use levels

Verdad N16 is a balanced formulation of vinegar and cultured corn sugar, enabling lower use levels compared to Verdad N15 and *Opti.Form* PD4.

About ferments

Fermentation is a centuries-old process that imparts multiple benefits to a finished food product, including enhanced flavor, improved texture and an increased microbiological stability. The addition of ferments to food products yields all of these advantages without actually fermenting the food product itself. These benefits can be attributed to the formation of fermentation intermediates such as organic acids, (poly)saccharides and peptides. Corbion is the largest and most experienced producer of antimicrobial ingredients.



Target use

Verdad N16 is most effective in cooked cured meat products such as hot dogs, smoked ham and deli meats. Depending on the application and required safety targets, an addition level of 1.5-2.5% (w/w) is recommended.

Listeria Control Model 2012

Corbion offers a unique tool – The *Listeria* Control Model 2012. This online model is easy to use and is at the forefront of predictive growth modeling. It is adjustable for eight food characteristics and allows you to predict the effect of Verdad N16 in your meat products.

The predicted growth is based on specifically designed and validated *Listeria* challenge studies. Predictions are depicted by the model in two ways.

- ▶ The 95% line; 95% of all growth is expected to be slower than this line.
- ▶ The “best fit” line; the most probable outcome for growth.

Figure 1 shows the predicted growth of *Listeria* in a typical cured hot dog formulation. Product parameters used are shown in the table below the graph. The control product is expected to reach 1 log of outgrowth not before 33 days (95% line). Addition of 2.2% Verdad N16 is expected to reach 1 log outgrowth for at least 123 days (95% line).

Improve flavor profile

To assess the sensory impact of Verdad N16 compared to *Opti.Form* PD4, a trained sensory panel scored on basic flavor properties to a cooked ham formulation. The ham formulated with Verdad N16 was preferred on both flavor and texture properties.

Verdad N16	
Form	Liquid
Labeling	Cultured corn sugar, Vinegar
Target use level	1.5-2.5%
Sodium impact on product	None

Predicted effect of Verdad N16 on suppression of *Listeria monocytogenes* in cured hot dog at 4°C/39°F

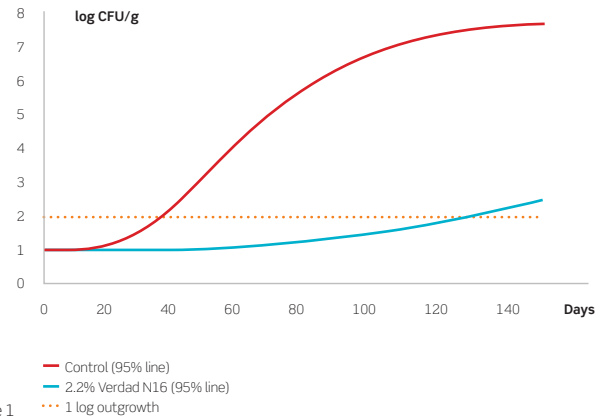


Figure 1

Parameters cooked cured hot dog

Moisture level	55%
Salt	2.0%
pH	6.1
aW	0.970
Ingoing nitrite	100 ppm
Verdad N16	2.2%

Sensory score of cooked cured ham



Figure 2



Request your free sample

Samples and detailed usage instructions, delivered right to your doorstep.
corbion.com/samples



Sample Support

With R&D facilities on every continent, we are always close by to help you with your application development.
corbion.com/contact

Interested in our solutions? Go to corbion.com/labelfriendly

 @CorbionFood

With over 80 years of fermentation expertise and the use of natural raw materials to produce exceptional food and beverage ingredients, Corbion Purac has a wealth of expertise in the world of biobased food ingredients. Corbion is the global market leader in lactic acid, lactic acid derivatives and lactides, and a leading company in functional blends containing enzymes, emulsifiers, minerals and vitamins. Corbion operates 10 production plants, in the USA, the Netherlands, Spain, Brazil and Thailand, and markets its products through a worldwide network of sales offices and distributors.

© Copyright 2013 Corbion. All rights reserved. No part of this publication may be copied, downloaded, reproduced, stored in a retrieval system or transmitted in any form by any means, electronic, mechanical, photocopied, recorded or otherwise, without permission of the publisher. No representation or warranty is made as to the truth or accuracy of any data, information or opinions contained herein or as to their suitability for any purpose, condition or application. None of the data, information or opinions herein may be relied upon for any purpose or reason. Corbion disclaims any liability, damages, losses or other consequences suffered or incurred in connection with the use of the data, information or opinions contained herein. In addition, nothing contained herein shall be construed as a recommendation to use any products in conflict with existing patents covering any material or its use.

