

# Pet Food Solutions

Unleash the power of partnership



## Who we are . . .

Corbion is a global market leader in lactic acid, lactic acid derivatives, emulsifiers, functional enzyme blends, minerals, vitamins and algae ingredients.

## Why Corbion?

Corbion ingredient solutions can help your pet food brand meet customer expectations in ways that make your business stronger. For more than 80 years, Corbion has been honing its expertise in formulation, processing, preservation and food safety. We create human-grade, renewable, biobased ingredient solutions that can be your edge in the highly competitive pet food space.

## We build trust

Ingredient selection has a tremendous impact on the safety, texture, uniformity, extrudability, nutritional quality and economic viability of your product. When you partner with Corbion, you're gaining an expert for a variety of needs. Whether your challenge is controlling *Salmonella*, inhibiting mold, preserving naturally, improving product release, or creating a specific nutritional profile, connect with us to find the ingredient solution that will earn pet owners' loyalty and trust.



# We solve challenges that matter

## Treats

### Certeza™ 755

Ideal for higher-moisture pet treats, **Certeza 755** provides natural flavor.

### Certeza™ Powder 750

Pet parents want simple-labeled foods for their dogs and cats, not just for themselves. Our **Certeza Powder 750** offers pet treat manufacturers an alternative for mold control and safety that rivals the effectiveness of sorbate and propionate.

## Dry Foods

### Certeza™ 9020F

Emulsifiers deliver highly versatile functionality. **Certeza 9020F**, a mono/di-glyceride that lubricates the extrusion dough and prevents fat separation, is just one example. Our broad portfolio of Emulsifiers can help deliver qualities you need to create the operational savings you desire.

### Certeza™ 88

Formulated for effective, cost-efficient pathogen control in pet foods, **Certeza 88** is the solution for *Salmonella* risk mitigation by reducing counts when present in post-extrusion coating materials.



## Refrigerated Foods

### Verdad® Avanta® F100

A unique combination of vinegar and jasmine tea extract, **Verdad Avanta F100** inhibits the growth of pathogens and spoilage bacteria, while improving color and flavor stability in cooked refrigerated dog food products.

### Verdad® N64

Corbion vinegar and ferment blends such as **Verdad® N64** are excellent for addressing potential *Listeria* and *C. Botulinum* risks. Moreover, these naturally derived formulations are proven to extend shelf-life to give you more distribution flexibility.



## Nutrition

### Algaprime™ DHA

A sustainable alternative to marine-based Omega-3s, **Algaprime DHA** is non-GMO powder formula that can be easily incorporated in pet food products.

### Puracal® PP

**Puracal PP** is a high-quality calcium lactate product which is registered and commonly used as a human food additive. It is optimized for ease of formulation and offers exceptional solubility, allowing for easy absorption by the body.

# Science-backed solutions

Making the product you envision a reality means implementing an ingredient solution that creates the physical, nutritional and sensory qualities you want, as well as the processing performance you need.

Behind every solution we provide is an ongoing dedication to rigorous R&D, advanced formulation expertise and highly experienced technical service.

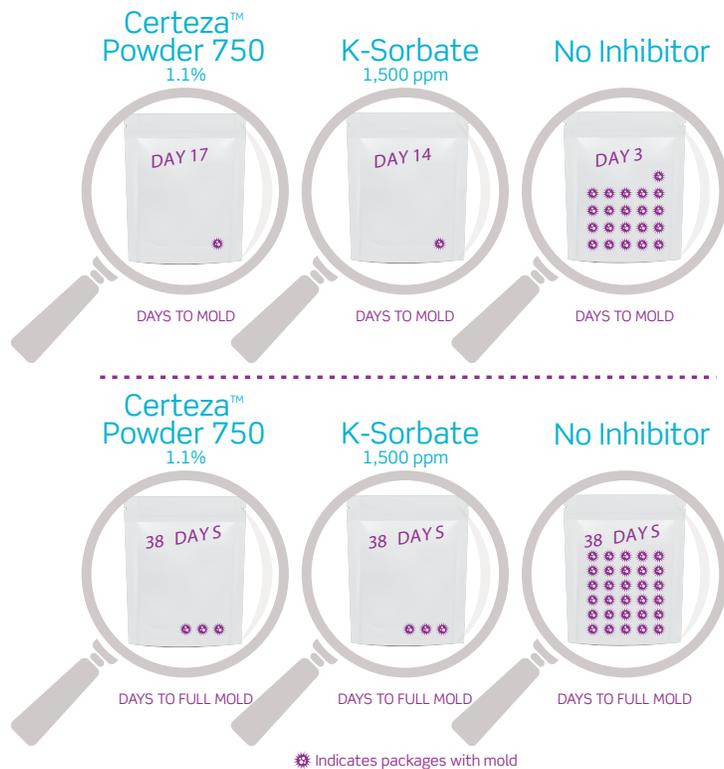
## Natural Mold Protection

In an accelerated study (Figure 1), Certeza Powder 750 was proven to rival the effectiveness of potassium sorbate for inhibiting mold in a high-moisture pet treat, which enables manufacturers to confidently shorten drying times, expand moisture levels and improve finished product texture. Treats containing Certeza Powder 750 were strongly preferred to those without the ingredient.

Vinegar is a source of acetic acid that is very effective against spoilage organisms and pathogens, and is commonly used in natural processed meats. Photos in Figure 3 show the beneficial effect of Verdad Avanta F100 on raw meat color while preventing the off-flavors and odors caused by fat oxidation and microbial spoilage.

Figure 1

## Accelerated Study



## Daily Preference by First Choice

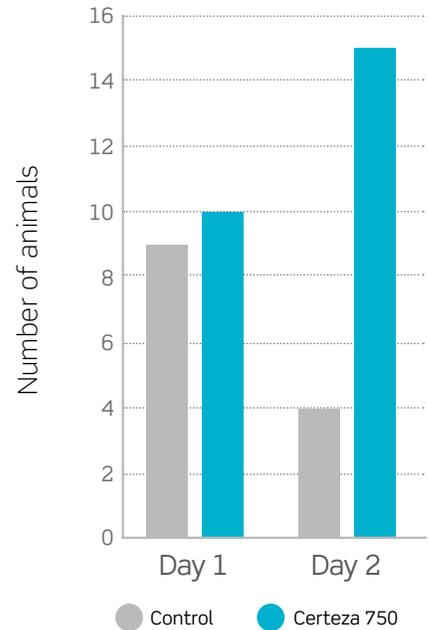


Figure 2

## Color: Fresh Pork Day 6 of storage



Figure 3

## Salmonella lethality

Lethality of *Salmonella* in pet food is **critical** from both safety and regulatory perspectives. A common area of risk for *Salmonella* contamination occurs in the post-extrusion application of rendered chicken fat. **Purac® FCC 88**, a natural lactic acid, effectively reduces *Salmonella* populations in rendered chicken fat; common inorganic acids such as fumaric acid and phosphoric acid do not.

Designed for use in pet foods, **Certeza™ 88** is a lactic acid formulation specifically blended for optimal antimicrobial performance.

In a proprietary study shown in **Figure 4**, lactic acid was tested for efficacy in killing *Salmonella* in chicken fat. According to the study, lactic acid treatments of 0.3% and higher achieved a >5 log reduction in *Salmonella*.

Phosphoric and Fumaric acids were also tested and did not result in a kill effect.

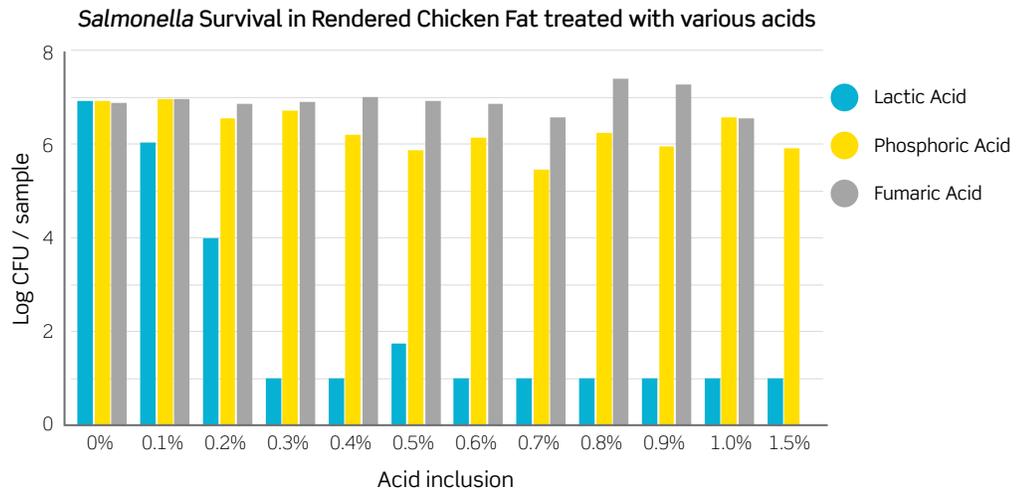
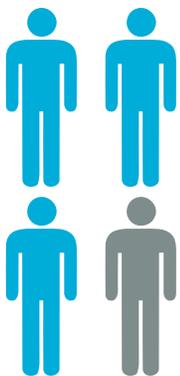


Figure 4



**75%**

of consumers who regularly purchase commercial packaged pet food and treats read the label for ingredients.\*

**Natural Flavor #1**

For both pet food and pet treats, 60% of respondents indicated **Natural Flavor was the most label friendly ingredient** followed by vinegar.\*

\*Source: Corbion Proprietary Research

Interested in learning how Corbion can partner with you? Visit [corbion.com/petfood](https://www.corbion.com/petfood)

[@corbionfood](https://twitter.com/corbionfood)

Corbion is the global market leader in lactic acid and its derivatives, and a leading supplier of emulsifiers, functional enzyme blends, minerals, vitamins, and algae ingredients. We use our unique expertise in fermentation and other processes to deliver sustainable solutions for the preservation of food and food production, health, and our planet. For over 100 years, we have been uncompromising in our commitment to safety, quality, innovation and performance. Drawing on our deep application and product knowledge, we work side-by-side with customers to make our cutting-edge technologies work for them. Our solutions help differentiate products in markets such as food, home & personal care, animal nutrition, pharmaceuticals, medical devices, and bioplastics. In 2020, Corbion generated annual sales of € 986.5 million and had a workforce of 2,267 FTE. Corbion is listed on Euronext Amsterdam. For more information: [www.corbion.com](https://www.corbion.com)

©Copyright 20121Corbion. 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 of 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.

