A Meta-Analysis of the Impact of the *Aspergillus oryzae* Fermentation Product on Dairy Cow Performance

Juan Manuel Cantet[1], Rafael Alejandro Palladino[1,2], César Ocasio[3], Fernando Bargo[3,4], Ignacio Rodolfo Ipharraguerre[5]

[1]Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Buenos Aires, Argentina
[2]Facultad de Ciencias Agrarias, Universidad Nacional de Lomas de Zamora, Buenos Aires, Argentina
[3]Biozyme, Inc., St. Joseph, MO, USA
[4]EPG – FAUBA, Universidad de Buenos Aires, Buenos Aires, Argentina
[5]Institute of Human Nutrition and Food Science, University of Kiel, Kiel, Germany

2019

- ***Aspergillus oryzae* (AO) fermentation product (AO-Biotics® Amaferm®, BioZyme Inc.) acts as a prebiotic, improving milk yield, feed intake, and digestibility in dairy cows**
- **Meta-analysis shows significant positive effects of AO on dry matter intake (DMI) and fat corrected milk (FCM) yield**

SUMMARY

DOSE OF AO-BIOTICS® AMAFERM® USED
Individual dosages in meta-analysis

Feed additives produced via microbial fermentation can enhance the innate ability of animals to degrade substrates such as fiber and increase the harvest of nutrients from consumed feeds. This study conducted a meta-analysis to evaluate the impact of **AO-Biotics® Amaferm®** on the performance of lactating dairy cows. The analysis included 18 studies comprising 31 treatment means, showing significant improvements in DMI and FCM yield with **AO-Biotics® Amaferm®**.

VALUE

AO-Biotics® Amaferm® enhances milk yield and feed efficiency, making it a valuable addition to dairy cow diets.

AO·biotics®

BIOZYME® INCORPORATED

PROTOCOL

Location:

- Various locations as per individual studies in the meta-analysis

Farm Information:

- Not specified; data compiled from multiple studies

Duration:

- Varied across studies, data compiled for meta-analysis from 1983 to 2018.

Animals:

- Lactating dairy cows as per individual studies included in the meta-analysis

Treatments:

- Diets supplemented with *Aspergillus oryzae* (AO) fermentation product

Trial Design:

- Meta-analysis of published studies with in vivo experiments on AO supplementation in dairy cows

Data Collection:

- Data were collected for dry matter intake (DMI) and fat corrected milk (FCM) yield from selected peer-reviewed papers published between 1983 and 2018

RESULTS

Supplementation of dairy cow diets with **AO-Biotics® Amaferm®** resulted in a significant average effect size for DMI (+0.390 kg/d) and FCM (+1.028 kg/d) ($p < 0.001$; Table 1).

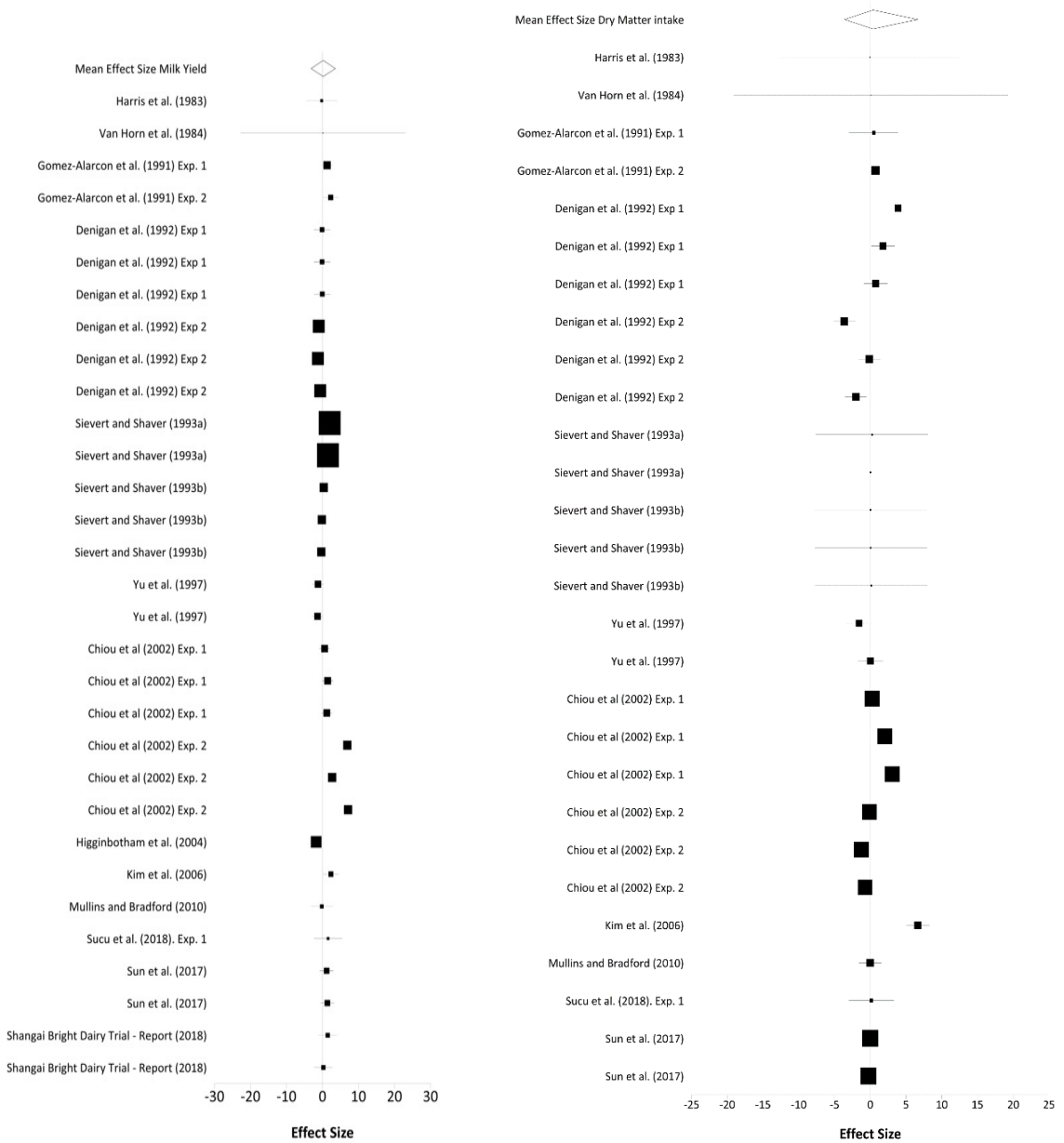

Figure 1. **Impact of *Aspergillus oryzae* fermentation product (AO-Biotics® Amaferm®) on fat corrected milk yield (kg/d) and dry matter intake of dairy cows (kg/d).** Forest plot on the left for milk yield (n = 31 studies) and forest plot on the right for dry matter intake (n = 28 studies).

RESULTS (CONTINUED)

Table 1. **Impact of *Aspergillus oryzae* fermentation product (AO-Biotics® Amaferm®) on dry matter intake (DMI) and fat corrected milk (FCM) yield of dairy cows.**

Item	Average effect size	SD	Number of studies	TSS	P-value
DMI	0.390	0.498	28	291	≤ 0.001
FCM yield	1.028	1.447	21	236	≤ 0.001

SD = Standard devation of effect size ;TSS = total sample size from those coefficients

BIOZYME INCORPORATED
6010 Stockyards Expy | St. Joseph, MO 64504 USA
Tel: 816-238-3326 | Fax: 816-238-7549
support@biozymeinc.com | www.biozymeinc.com