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SCIENTIFIC OPINION

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Efficacy of the feed additive consisting of *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 (AQ02) for suckling piglets (Aquilon Cyl S.L.)

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Abstract

Following a request from the European Commission, EFSA was asked to deliver a scientific opinion on the feed additive consisting of *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 (AQ02) as a zootechnical feed additive for suckling piglets. In a previous opinion the FEEDAP Panel concluded that the additive is considered safe for the target species, the consumer, and the environment. The Panel concluded that the additive should be considered a respiratory sensitiser but could not conclude on the skin/eye irritation potential or on its skin sensitisation potential. The Panel previously could not conclude on the efficacy of AQ02. The applicant has provided supplementary information to support the efficacy of the additive in suckling piglets. Based on the data provided, the FEEDAP Panel could not conclude on the efficacy of the additive.

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Keywords: zootechnical additives, gut flora stabilisers, AQ02, *Lactiplantibacillus plantarum* CECT 8350, *Limosilactobacillus reuteri* CECT 8700, efficacy, suckling piglets

Requestor: European Commission

Question number: EFSA-Q-2022-00353

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Note: This output replaces the previously adopted version, more detailed information available at the following link: https://www.efsa.europa.eu/sites/default/files/2023-05/feedap230511-12_a.pdf (agenda point 5.17) and https://www.efsa.europa.eu/sites/default/files/2023-02/feedap20230131-0202_a_0.pdf (agenda point 5.22).

Declarations of interest: If you wish to access the declaration of interests of any expert contributing to an EFSA scientific assessment, please contact interestmanagement@efsa.europa.eu.

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1. Introduction

1.1. Background and Terms of Reference as provided by the requestor

Regulation (EC) No 1831/2003[1] establishes the rules governing the Community authorisation of additives for use in animal nutrition and, in particular, Article 9 defines the terms of the authorisation by the Commission.

The applicant, AQUILON CYL S.L.,[2] is seeking a Community authorisation of *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 as a feed additive to be used as gut flora stabilisers for suckling piglets (Table 1).

Table 1: Description of the substances

Category of additive	Zootechnical additives
Functional group of additive	Gut flora stabilisers
Description	*Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700
Target animal category	Piglets (suckling)
Applicant	AQUILON CYL S.L.
Type of request	New opinion

On 6 May 2021, the Panel on Additives and Products or Substances used in Animal Feed (FEEDAP) of the European Food Safety Authority (EFSA), in its opinion on the safety and efficacy of the product, could not conclude on the efficacy of *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 and indicated the following: "In the absence of adequate data, the Panel cannot conclude on the efficacy of product *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 as a zootechnical feed additive for suckling piglets.".

The Commission gave the possibility to the applicant to submit supplementary information and data in order to complete the assessment and to allow a revision of the EFSA's opinion. The new data have been received on 27 April 2022 and the applicant has been requested to transmit them to EFSA as well.

In view of the above, the Commission asks the Authority to deliver a new opinion on *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 as a feed additive for piglets (suckling) based on the additional data submitted by the applicant, in accordance with Article 29(1)(a) of Regulation (EC) No 178/2002.

1.2. Additional information

The additive is a preparation containing *Lactiplantibacillus plantarum* CECT 8350 and *Limosilactobacillus reuteri* CECT 8700. The additive is currently not authorised in the EU. The EFSA FEEDAP Panel issued an opinion on the safety and efficacy of this product when used in feed for suckling piglets (EFSA FEEDAP Panel, 2021). The FEEDAP Panel could not conclude on the efficacy of the additive for the target species.

2. Data and Methodologies

2.1. Data

The present assessment is based on data submitted by the applicant in the form of supplementary information[3] to a previous application on the same product.[4] The dossier was received on 3/6/2022 and the general information and supporting documentation available on Open.EFSA at https://open.efsa.europa.eu/questions/EFSA-Q-2022-00353.

[1] Regulation (EC) No 1831/2003 of the European Parliament and of the council of 22 September 2003 on the additives for use in animal nutrition. OJ L 268, 18.10.2003, p. 29.
[2] Facultad de Veterinaria, Campus de Vegazana, 24007, León, Spain.
[3] Dossier reference: EFSA-Q-2022-00353.
[4] Dossier reference: EFSA-Q-2019-00487 (FAD-2019-0048).

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In accordance with Article 38 of the Regulation (EC) No 178/2002,[5] and taking into account the protection of confidential information and of personal data in accordance with Articles 39 to 39e of the same Regulation, and of the Decision of EFSA's Executive Director laying down practical arrangements concerning transparency and confidentiality,[6] a non-confidential version of the supplementary information has been published on Open.EFSA.

2.2. Methodologies

The approach followed by the FEEDAP Panel to assess the efficacy of *Lactiplantibacillus plantarum* CECT 8350 and *Limosilactobacillus reuteri* CECT 8700 (AQ02) is in line with the principles laid down in Regulation (EC) No 429/2008[7] and the relevant guidance document: Guidance on the assessment of the efficacy of feed additives (EFSA FEEDAP Panel, 2018).

3. Assessment

The product under assessment consists of viable cells of *Lactiplantibacillus plantarum* (formerly *Lactobacillus plantarum*) CECT 8350 and *Limosilactobacillus reuteri* (formerly *Lactobacillus reuteri*) CECT 8700 intended for use as a zootechnical additive (functional group: gut flora stabilisers) in feed for suckling piglets. It will hereafter be referred to as AQ02, its trade name.

The additive is intended for oral administration to suckling piglets. A single oral application of 1×10^9 colony forming units (CFU) is foreseen after the first colostrum intake and within 24 h post-farrowing. A total of 50 mg of the additive are administered in 2 mL as an aqueous suspension.

In the previous opinion (EFSA FEEDAP Panel, 2021), the FEEDAP Panel concluded that the additive is considered safe for the target species, the consumer and the environment. The Panel concluded that the additive should be considered a respiratory sensitiser but could not conclude on the skin/eye irritation potential or on its skin sensitisation potential. Regarding the efficacy, the applicant previously provided three studies (EFSA FEEDAP Panel, 2021) with suckling piglets and sharing a similar design. In the previous assessment, the FEEDAP Panel could not conclude on the efficacy of the additive, since none of the three studies considered for the assessment supported the efficacy of AQ02 as a zootechnical additive in suckling piglets. The applicant has provided another *in vivo* study in suckling piglets.

3.1. Efficacy

In the current application, to support the efficacy in the target species, the applicant has provided a trial aimed at assessing the effect of the additive on the zootechnical performance of the piglets during the suckling period (up to 28 days of life);[8] the study also included the monitoring of the animals during 1 week after weaning (up to 35 days of life). However, the Panel did not consider the data of the post-weaning period as evidence of the efficacy of AQ02 due to the following experimental design limitations: short duration of the monitoring period, high number of veterinary treatments and inappropriate experimental unit used for the statistical analysis.

Twenty Landrace × Large White sows were distributed in two homogeneous groups in terms of body condition (according to back fat) and parity (same number of primiparous and multiparous sows within each group; four primiparous/group). The animals were placed in two contiguous parity rooms with 10 pens each (5 litters per treatment in each room). After the first colostrum intake and within 24 h after farrowing, the piglets were individually administered a single oral dose either of a sterile saline solution without (control) or with the additive suspended at 25 mg/mL (correspondent to a total of 1×10^9 CFU/piglet). From farrowing to weaning, each litter remained in the farrowing pen with the respective mother. Cross-fostering after farrowing was not performed. The piglets were offered a creep feed from day 8 to 20 of age, and a pre-starter feed from day 21 to 28.

[5] Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety. OJ L 31, 1.2.2002, p.1–48.
[6] Decision available online: https://www.efsa.europa.eu/en/corporate-pubs/transparency-regulation-practical-arrangements
[7] Commission Regulation (EC) No 429/2008 of 25 April 2008 on detailed rules for the implementation of Regulation (EC) No 1831/2003 of the European Parliament and of the Council as regards the preparation and the presentation of applications and the assessment and the authorisation of feed additives. OJ L 133, 22.5.2008, p. 1.
[8] AQ02-T17_FR_FINAL_full_signed and 2022-10-28_EFSA-Q-2022-00353_AQ02 (Lactobacillus plantarum CECT 8350 and Lactobacillus reuteri CECT 8700) for sucking piglets.

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The mortality and health status of the animals were monitored daily, and the most likely cause of death, reason for culling and use of veterinary treatments recorded. In terms of zootechnical parameters, all piglets were individually weighed at birth (day 1) and weaning (day 28), and the average daily weight gain calculated. The litter feed intake was measured weekly since the start of the administration.

Regarding health parameters, general clinical signs and need for antibiotic or other veterinary treatments were registered and compared among treatments. Mortality was reported. Other parameters were measured, such as faecal consistency and microbiota, which did not significantly differ between groups by the end of the suckling period.

The zootechnical performance data were analysed with a generalised linear model, including the treatment and the parity of the sow as fixed effects and the piglets' initial body weight as a covariate. The significance level was set at 0.05.

The individual piglet was the experimental unit used in the statistical model to evaluate the zootechnical performance of the piglets. The Panel notes that the experimental unit used was incorrect, and the litter/sow should have been considered instead. Despite that, the results did not show any significant differences between the groups for any zootechnical parameter recorded during the lactation period (body weight, total feed intake, average daily gain, mortality) (Table 2). Considering the absolute values recorded for these parameters, the Panel considers unlikely that the use of litter as the experimental unit would modify the results.

Table 2: Effects of AQ02 on the performance of suckling piglets

Groups	Litter size		Body weight		Average daily weight gain	Total feed intake	Mortality and culling
	Initial	Final	Farrowing (day 1) (kg)	Weaning (day 28) (kg)	(g)	(g/pig)	(%)
Control	12.5	11.7	1.26[b]	7.33	214.6	137.7	4.8%
AQ02	12.4	11.4	1.33[a]	7.34	214.9	166.5	8.1%

[a,b]: Mean values within a trial and within a column with a different superscript are significantly different $p < 0.05$.

4. Conclusion

Considering the studies made available in the previous assessment and the one in the current assessment, the FEEDAP Panel is not in the position to conclude on the efficacy of the additive AQ02 for suckling piglets.

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Abbreviations

CECT	Spanish Type Culture Collection (Colección Española de Cultivos Tipo)
CFU	colony forming unit
FEEDAP	EFSA Scientific Panel on Additives and Products or Substances used in Animal Feed

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