

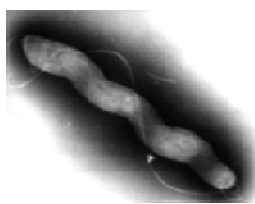
Control of Campylobacter infection in broiler flocks through two-steps strategy: nutrition and vaccination”
CAMPYBRO-FP7-SME-2013-605835

Executive summary

Campylobacteriosis is the most frequently reported zoonotic illness at the EU in 2011, with 9



million human cases, and a total annual cost of 2.4 billion € per year in the EU27. Poultry meat is the major single source of human infection. Recent studies have shown that European broiler flocks have a high prevalence of Campylobacter colonization with an average of 71%. However, there is still no effective, reliable and practical strategy available to prevent or to reduce Campylobacter colonization in broilers. The objective of the present project is to develop a two-steps strategy in order to fight against Campylobacter in primary poultry production: first step nutritional approach, through the use of a synergic combination of different products such as plant extracts (PE), organic acids (OA), prebiotics (PRE), probiotics (PRO), and feed presentation (FP) through 4 work packages (WPs) in which trials with infected broilers and in experimental and real conditions will be done. In a second step, vaccination approach based on a novel development of a Campylobacter vaccine through the use of reverse vaccinology. The expected results of the project will be a short term strategy through new nutritional strategies based on a synergic combination of feed products and feed presentation and a medium term strategy through a novel vaccine to reduce the prevalence of Campylobacter in broiler flocks. The consortium is formed by five National poultry producers SME-AGs (PROPOLLO, FIA, CIDEF, NEPLUVI and BTT), two RTD (ANSES, and IMASDE) and three SMEs (MIKROLAB, REDONDO, and CZV).



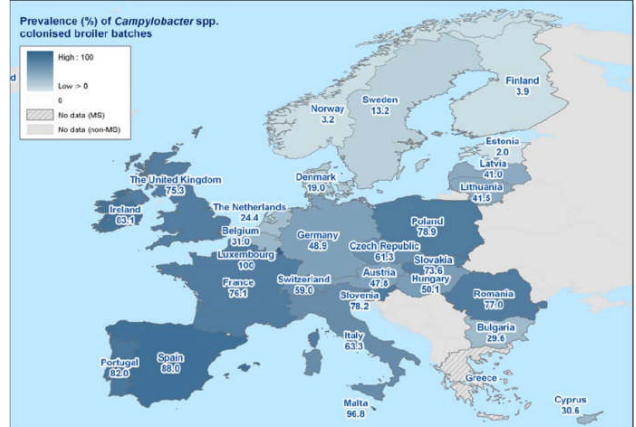
Replying to a competitive threat

Campylobacter is a bacterium that can cause an illness called campylobacteriosis in humans.

With over 190,000 human cases annually, this disease is the most frequently reported food-borne illness in the European Union. However, the actual number of cases is believed to be around nine million each year. The cost of campylobacteriosis to public health systems and to lost productivity in the EU is estimated by EFSA to be around EUR 2.4 billion a year. Poultry meat is a mayor, if not the largest, single source of human infection. In an EU baseline survey over the contamination level in both broiler carcasses and flocks, and results showed that at the Community level the average prevalence of Campylobacter colonization was as high as 71% and 76% respectively. Therefore, it can be concluded that Campylobacter issue in Poultry is one of the most important topics in the EU in terms on food safety and public health, and that the primary source of Campylobacter is primary production.



Prevalence (%) of *Campylobacter* spp. Colonized broiler batches (EFSA Journal 2010; 8(03):1503).



Quantitative risk assessment based on EU data concluded that there is a linear relationship between prevalence of Campylobacter in broiler flocks and public health risk. Reducing the numbers of Campylobacter in the intestines at slaughter by 3 log₁₀-units, would reduce the public health risk by at least 90%.

Objectives

The objective of CAMPYBRO project is to develop practical strategies to decrease the *Campylobacter* infection in broiler chickens. For this, two strategies are developed: a first short-term strategy based on nutritional interventions (additives and feed form, and their interactions), and a second medium-term strategy based in a vaccine development.



All strategies must be practical, and they will be tested not only for their ability to reduce the *Campylobacter* counts *in vivo*, but also for their impact in the performance of animals.

Then, the best alternatives will be tested in naturally

infected experimental conditions. The strategies will be tested sequentially in challenge trials, experimental farm, practical restricted conditions, and real practical conditions in field conditions (Spain and Hungary, WP6).

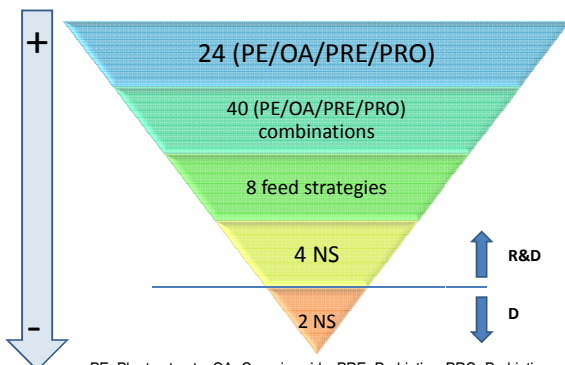
Work plan



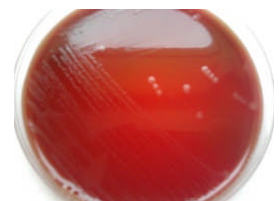
The project is structured in 8 work packages (WP). The first four (WP1-4) will test both the efficacy of several


additives (probiotics, prebiotics, plant extracts and organic acids and their interactions), feed presentations (coarse milling, type of cereal, whole grain feeding), and the interaction between feed form and additive addition, in challenge trials.

The vaccine strategy (WP5) will use reverse vaccinology methods to detect vaccinating candidates, and to test them in several vaccinating protocols. WP7&8 are related to management and dissemination activities, respectively.



PE: Plant extracts; OA: Organic acids; PRE: Prebiotics; PRO: Probiotics;
 NS: Nutritional Strategies;
 R&D: Research and development; D: Demonstration



			CAMPYBRO GA: 605835	Press Release of the Project	[3]
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Project file

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Project title Control of Campylobacter infection in broiler flocks through two-steps strategy: nutrition and vaccination
Project coordinator IMASDE AGROALIMENTARIA, S.L.
Dr. Pedro Medel
C/Nápoles, 3.
28224 Pozuelo de Alarcón
Madrid, Spain
Phone: +34917362609
E mail: pmedel@e-imasde.com
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EC Contribution 1,793,871.20€

Partners

RTDS

IMASDE
AGROALIMENTARIA,
S.L. (IMASDE), SPAIN



AGENCE NATIONALE
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SME-AGs

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