



Citrus based additive characterization to explain microbiota modulation of peripartum sows and beneficial consequence on performances

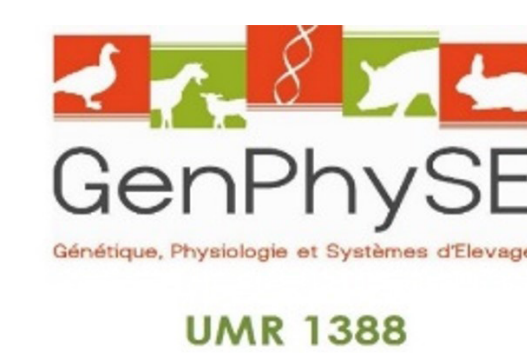
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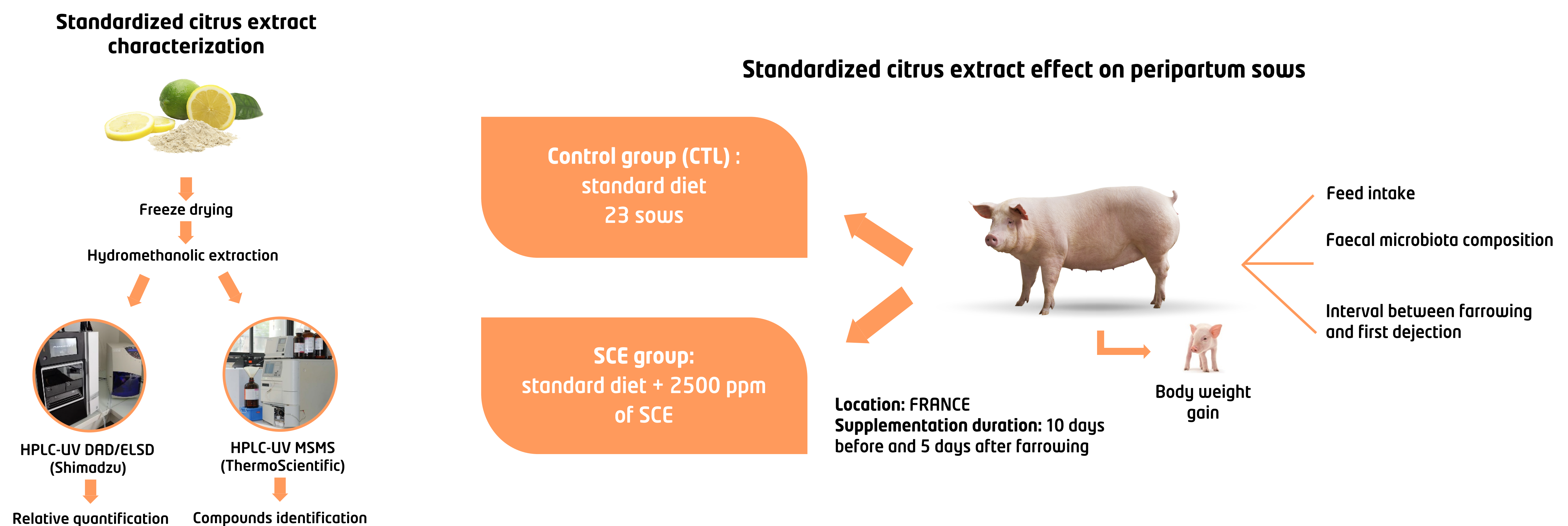


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Introduction

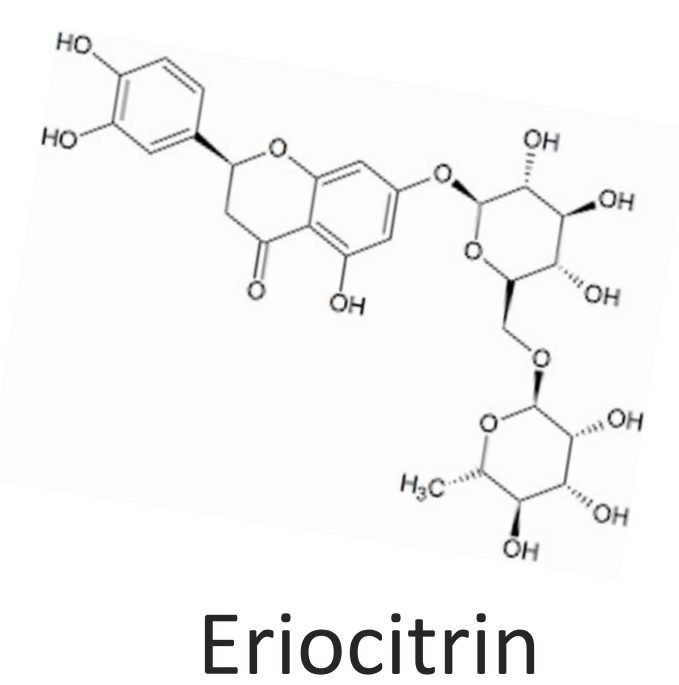
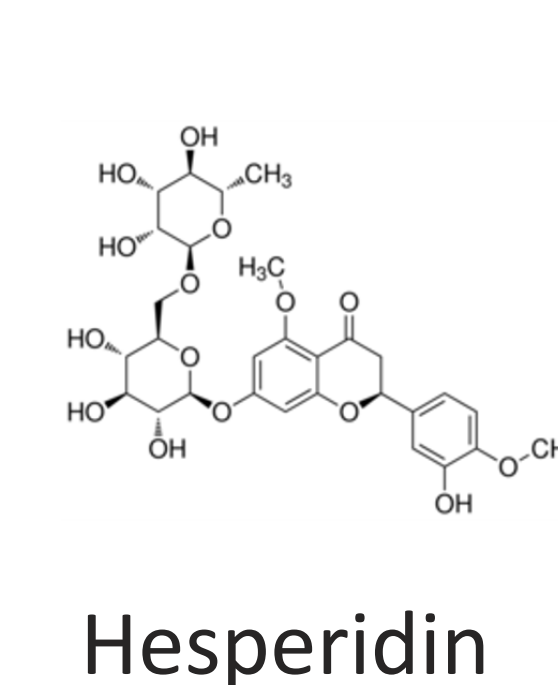
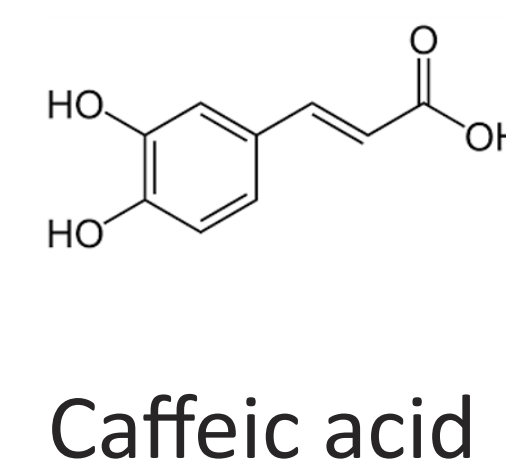
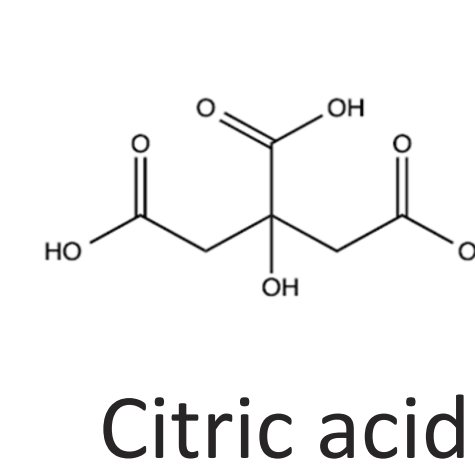
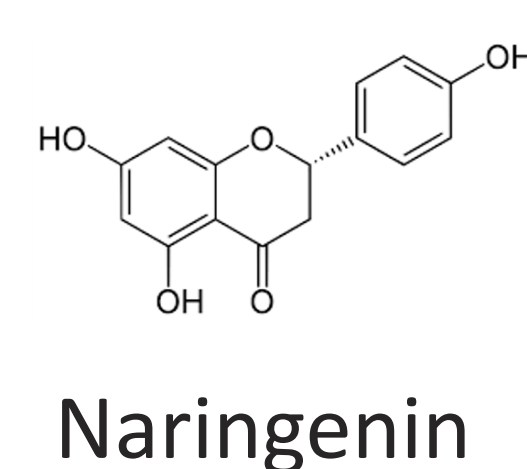
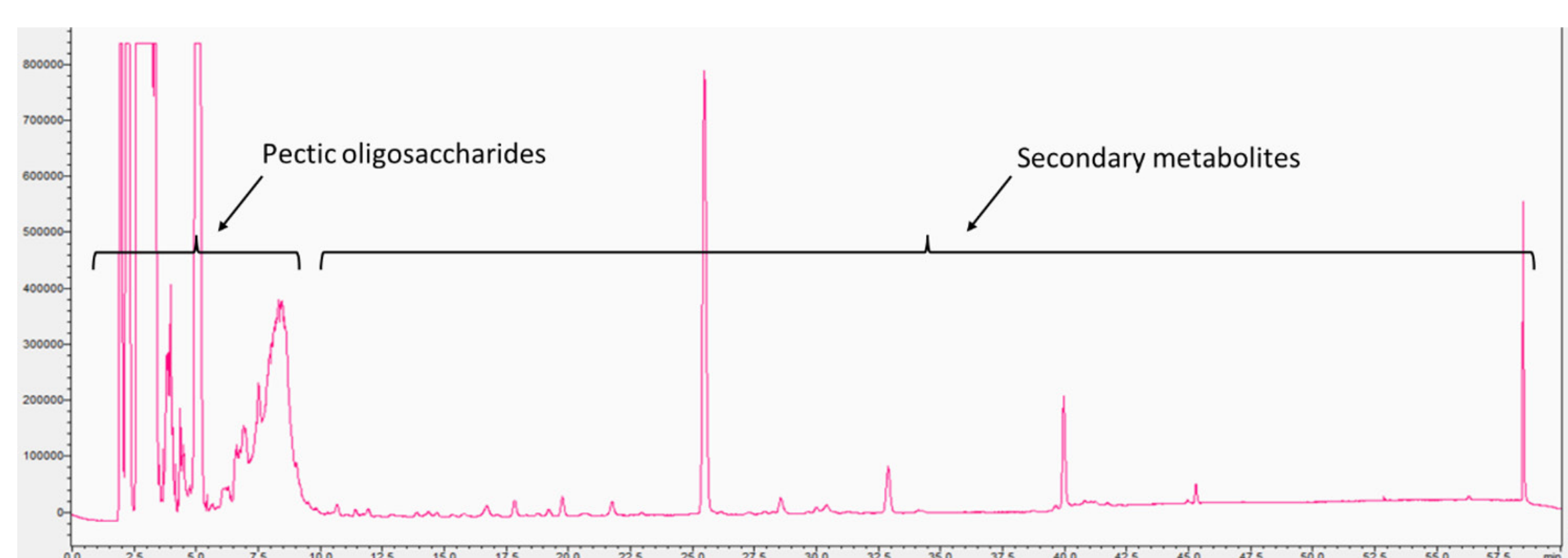
Farrowing is a critical period for sows. This stage is very suitable for digestive disorder such as constipation. Most of the time, these troubles are closely linked to dysbiosis and can have harmful consequences on animals. To manage these situations, intestinal microbiota modulation could be an effective solution. The aim of this study was to evaluate the effect of a Standardized Citrus Extract (SCE, Nor-Spice® AB, Nor-Feed SAS) on peripartum sows and their offspring's. SCE has also been characterized to better understand the observed effect on sows.

Material and methods

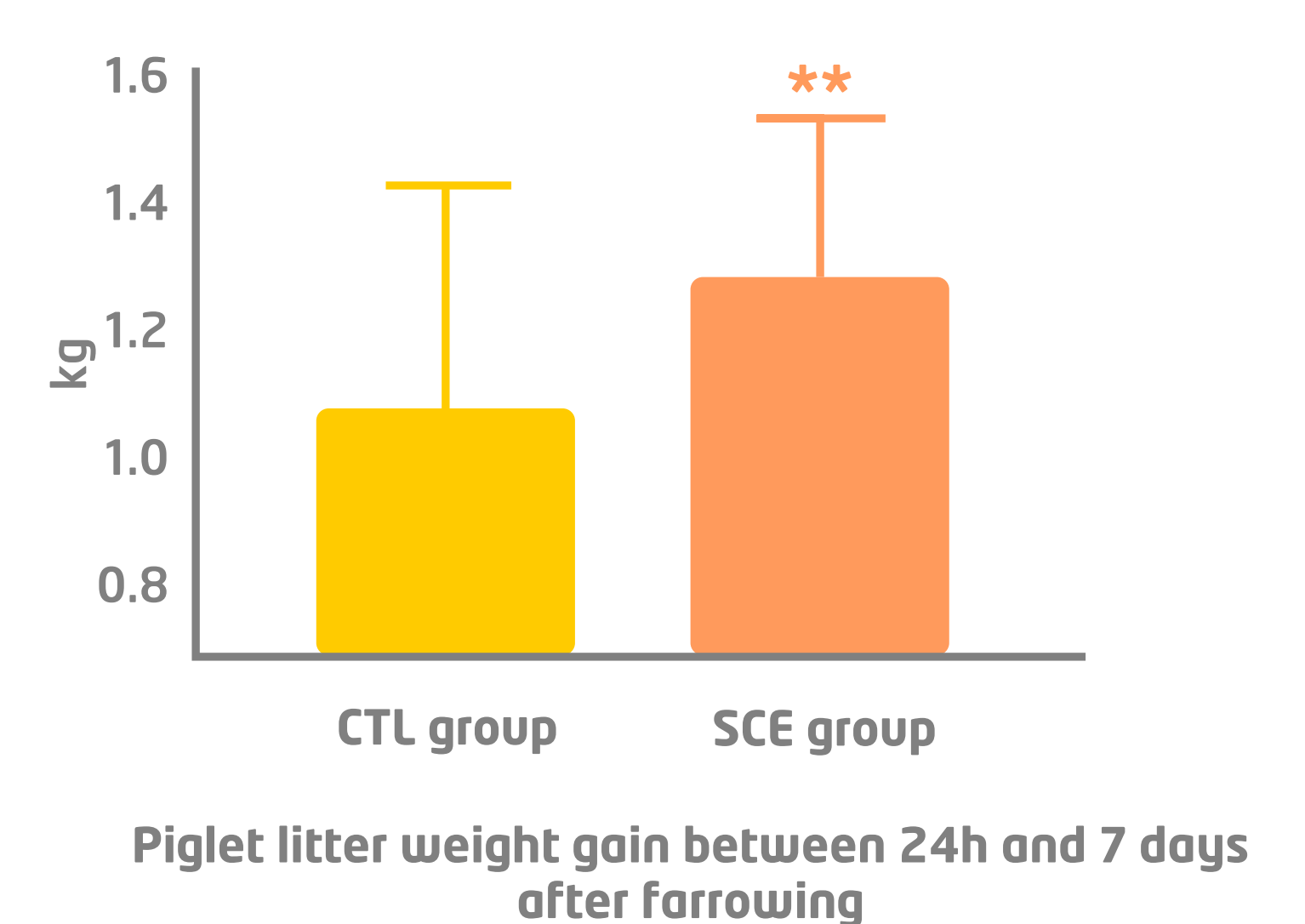
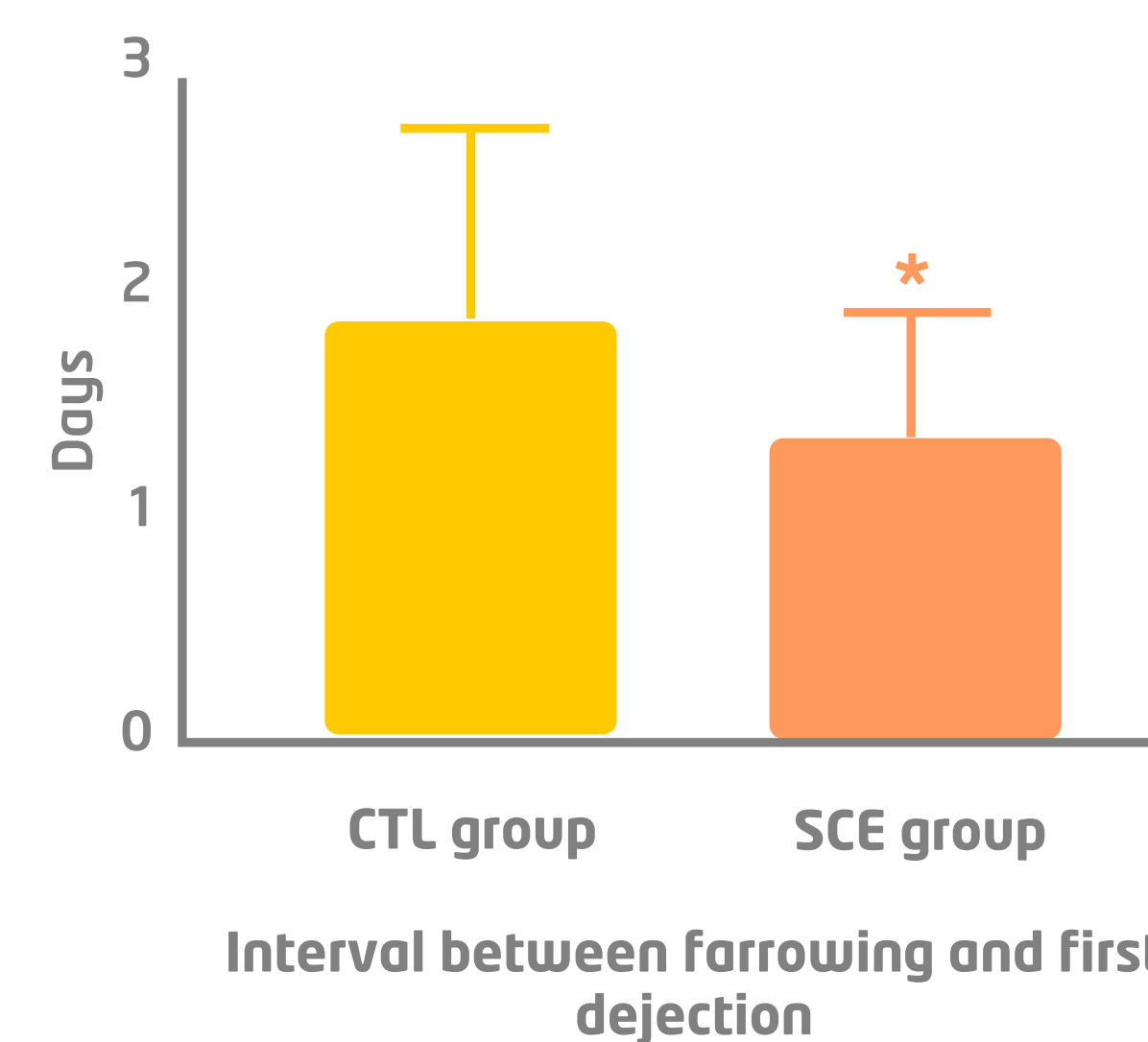
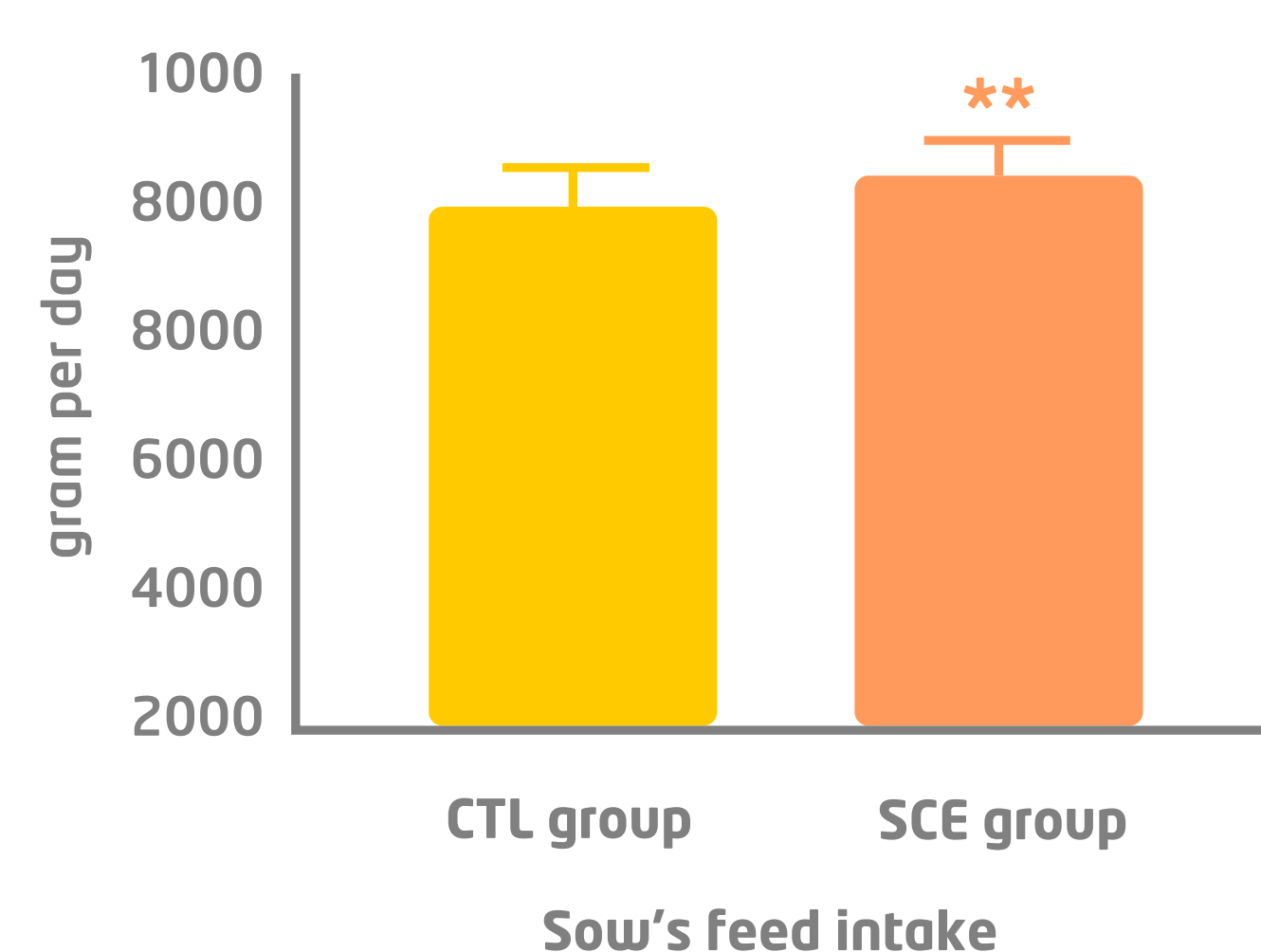
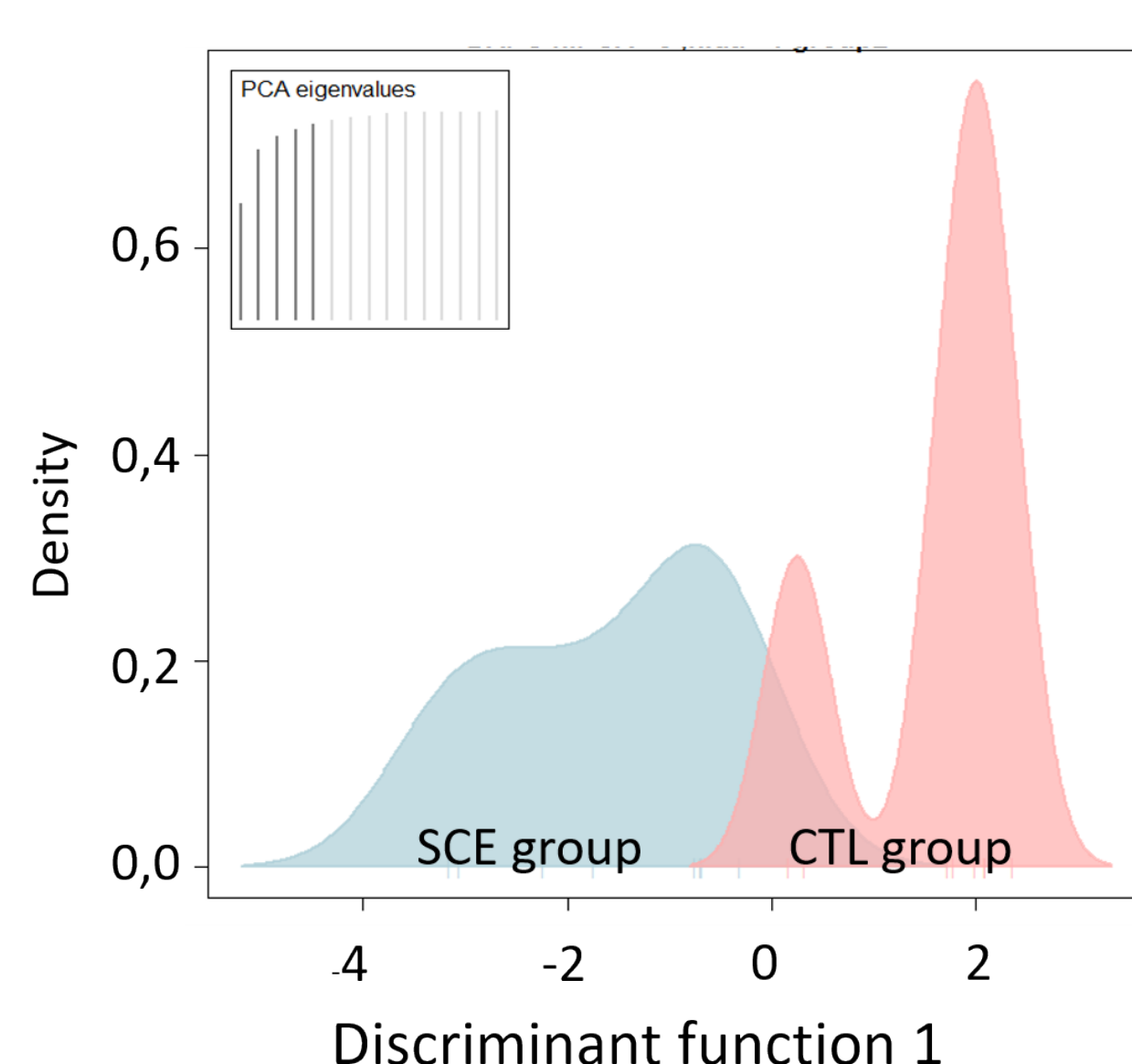


Results

SCE characterization



SCE effect on paripartum sows



Results showed that SCE supplementation allow to increase feed intake and decrease the interval between farrowing and first defection (which indicate a better transit resumption) compared to the normal situation. Moreover, piglets litter weight gain between 24h and 7 d after farrowing was higher in SCE group compared to CTL group. The microbiota analysis has shown different microbiota composition between the two groups Characterization of SCE allow to identified pectic oligosaccharides as SCE major compounds as well as 30 secondary metabolites including Naringenin, Citric acid, Caffeic acid, Hesperidin and Eriocitrin. These compounds are well known for their positive effect on different compartments of the gut and microbiota, according to the literature.

Conclusion

The obtained results demonstrate the interest of a SCE supplementation on peripartum' sows, with a positive effect on sows microbiota and welfare. Litter zootechnical performances were also positively affect by SCE supplementation. Pectic oligosaccharides, citroflavonoids, and which were identified in the SCE may explain the positive effect observed on sows and piglets. Further studies will be necessary to confirm the role of these molecules.