

## Special Issue

# Trace elements (minerals and vitamins) in non-ruminant livestock nutrition

### Message from the Guest Editor

Trace minerals may become the next limiting factors for the expansion of livestock farming. It has also to be considered that some micro-minerals, such as zinc and copper, are used in supra-nutritional levels as an alternative to the prophylactic use of antibiotics in some species because of their intestinal bacteriostatic properties. Although efficient, over the last decades, evidence has suggested that this practice may increase the appearance of genes related to bacterial resistance to antibiotics and even of genes related to bacterial resistance to these minerals.

For vitamins, heterogeneous recommendations can be found in the animal nutrition industry, and empiricism is still present mostly because of the limited scientific information on their overall metabolic fate. Research on the use of vitamins in animal nutrition has moved from prevention of deficiencies to maximization of growth and reproductive performance since the middle of the 20th century.

The rise of new technologies together with the use of multidisciplinary approaches will help to fill the gaps of knowledge that are more apparent in the study of trace elements than in any other area of nutrition.

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### Guest Editor

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### Deadline for manuscript submissions

closed (31 January 2020)



## Animals

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### Message from the Editor-in-Chief

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