Editorial

Special Issue Dedicated to Articles Presented at the World Buffalo Congress, Caracas, Venezuela, 2023, November 22-24

INTRODUCTION

The International Buffalo Federation (IBF) was founded in 1985 in Cairo during the first World Buffalo Congress (WBC), where the IBF Constitution and By-Laws were written. During each WBC, the new IBF President was elected by secret ballot by the IBF members of the Standing Committee, and the elected President organized the next WBC after three years. The WBCs were organized on different continents, arriving at the 13th WBC in 2023, November 22-24, in the Melià Hotel, Caracas, Venezuela.

Zulia University published many lectures in the Revista Cientifica, Volume XXXIII, a special supplement, but some lectures and all the posters are published only as abstracts.

Therefore, I, as IBF General Secretary and Editor-in-Chief of the Journal of Buffalo Science, asked all people with lectures published as abstracts to publish their presentations in this special issue of the Journal of Buffalo Science in full.

The theme of the special issue, of course, regards Buffalo sciences, particularly the sustainability of buffalo livestock and reduction of methane emission, a pivotal topic as the planet's difficulty is the need for animal proteins for humanity saving sustainability. Other themes are immune system efficiency, preserving the species from pathologies, mechanical and automatic milking systems' efficiency in production and working time, and factors affecting milkability.

We present four papers in this special issue, all by Italian authors.

Animal breeding, particularly in Europe, is contested by different animalist parties, vegan groups, and green parties, as they assign livestock a weight bigger than the real one in climatic change. For that, the European Union finances projects to reduce emissions, particularly animal methane, and to increase farming sustainability.

We have two papers on this theme. The first one regards the co-digestion of buffalo sludge and tomato pomace post-thermal stress, as both productions generate waste and significantly impact environmental sustainability. Thermal stress can change microflora composition and biogas production. The new milieu was found to be capable of fermenting high organic loads. This may allow a greater amount of tomato waste to be recycled, with practical and environmental benefits. However, the correct trade-off between high TP recovery and higher energy costs of the process should also be taken into consideration.

The second one compared different protocols of DNA extraction and various methods to process ruminal digesta via rumen cannula, buccal fluid, and feces to assess the feasibility of utilizing non-invasive samples as proxy indicators for ruminal digesta, considering that the genome controls rumen microbial communities and therefore methane emission.

The third paper regards a different argument related to milk production and the economy of milking jobs through the milk flow curves: eight different types of milk flow curves were identified in buffalo with different milking times and milk ejection. Factors affecting milkability were also examined to reduce the total milking time and the worker's time and to improve the farmer’s profitability and the milk quality, reducing the incidence of mastitis. Milk flow curves at the automatic milking system revealed better pre-stimulation, independent milk ejection for each teat, and optimal milking for all quarters if compared with conventional ones.

The fourth paper is focused on the buffalo's immune system, which plays an important role in ensuring animal health. It is part of the general regulatory network linking physiology, pathophysiology, and behavior. This study

presents the buffalo immune system at different ages, finding significative differences between age groups and between different herds, providing a useful cytometric tool to study cellular immunity in buffalo peripheral.

CONCLUSION

The overall contribution of the special issue to the field of buffalo research is evident, involving the theme of sustainability and emission reduction in buffalo livestock, the economy of milking systems, milk quality, and finally, the monitoring of the immune system.

It is important that this Journal was involved in some reports of the World Buffalo Congress, the most important event in the field.

All the scientists are encouraged to find incentives for future research and to publish in this Journal.

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Editor-in-Chief:
Prof. Dr. Antonio Borghese,
General Secretary International Buffalo Federation,
CREA, Via Salaria 31, 00015 Monterotondo,
www.internationalbuffalofed.org
E-mail: info@internationalbuffalofed.org