**Mycoplasma? Mesomycoplasma? Metamycoplasma?**
**Which name is the right one? Which one should be used?**

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The two-term naming system, or binomial nomenclature, proposed in the 1700s by Carl Linnaeus has allowed for the assignment of a conventional scientific name that can be used by all, providing unequivocal identification and reference to living species, including bacteria. The binomial system is the key to a common language understood and followed universally. One important aspect of this system is that it is not static and that additions and modifications to scientific names are frequently proposed and accepted, or rejected, in the face of new information. At present, there is discussion in the scientific community regarding the scientific names of all bacterial species within the Mycoplasma genus, several of which affect swine. Thus, insights into the "new names" that you may have read or heard about for swine Mycoplasma species are shared here.

It all started in 2018, when Gupta et al. proposed the creation of a new order, new families, and new genera to group mycoplasmas, based on molecular-based evolutionary relationships and under the argument that far too many species that were not closely related were included in the same genus. This proposal, which originated from outside of the mycoplasma community, was unexpected, carried out without consultation from the research community engaged in studying these organisms, and certainly not well received. Therefore, the Subcommittee on the taxonomy of Mollicutes (a branch of the International Committee on Systematics of Prokaryotes; ICSP) convened during the meeting of the International Organization for Mycoplasmology in 2018 to evaluate the proposed nomenclature. A response publication was prepared by the subcommittee recommending rejection of the new names based on the violation of essential points of the International Code of Nomenclature of Prokaryotes (Balish *et al.*, 2019). However, following a rebuttal (Gupta & Oren, 2020), this recommendation to reject the alternative nomenclature by the mycoplasmology community was itself rejected by the ICSP, which is the group that develops the international code used for the naming of prokaryotes. The ICSP is composed of academics interested in taxonomy or scientists with a particular expertise, consists of approximately 18 subcommittees, and has the authority to make judgments and ratifications. In this specific case, certain proponents of the new nomenclature for mycoplasmas are also ICSP members. Nevertheless, in 2022 the ICSP ruled in favor of the proposed nomenclature, stating the need to rectify taxonomic anomalies of a highly disordered taxa. These disputed names have been adopted by key databases, such as the National Center for Biotechnology Information (NCBI), bringing the new nomenclature, which is rejected by mycoplasmologists, to the fore.

The discussion is ongoing and a new rejection manuscript is being prepared by the Subcommittee on the taxonomy of Mollicutes, which met during the July 2023 International Organization for Mycoplasmology meeting, held in Japan. An appeal to revoke the decision of the ICSP will be put forward based on various factors, such as the existence of perilous names, the absence of consideration of clinical implications and consultation with relevant communities, and the violation of naming conventions used for the Mollicutes.

However, it could take up to one and a half years for the appeal just to be discussed by the ICSP. Therefore, the situation does not seem to have a definitive solution in the near future. The trend to rename bacterial genera is widely spread and has also reached other scientific communities with resistance, as the proposed modifications to the genus Brucella (Moreno et al., 2023).

In summary, changes in the scientific naming of all Mycoplasma species have been proposed and accepted by one International Committee, but agreement with experts has not been reached. On one hand, swine Mesomycoplasma hyopneumoniae, Mesomycoplasma hyorhinis and Metamycoplasma hyosynoviae could be referred to that way. On the other hand, the original nomenclature is still considered valid alongside the new nomenclature by the ICSP, and the Bergey's Manual of Systematic Bacteriology, the main re- source to determine the identity of prokaryotes, is retaining the original nomenclature. Therefore, the "old names," like Mycoplasma hyopneumoniae, Mycoplasma hyorhinis and Mycoplasma hyosynoviae are correct as well. As long as both sets of names are accepted, practitioners, diagnosticians, and researchers around the world will pick their favorite one to use, while, to the detriment of the scientific community, double naming and confusion are likely to reign. Stay tuned!

**References**

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