

Pighealth BYTES

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Vaccinology XVII

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Combination vaccines

Combination vaccines are highly appreciated by pork producers. The number of vaccinations is steadily increasing and the labour needed to administer these injections is hard to find. It is therefore no wonder that every multi-pathogen vaccine finds a warm welcome when introduced. Increased convenience and economic motives are driving the interest in these combinations.

Combination vaccines are present in different forms. Some of the registered combination vaccines are truly ready to use because all components are present in just one bottle, but there are also registered combinations that need to be prepared freshly and just before administration to the pigs. This can be a live freeze-dried component added to a ready-to-use second vaccine, or two ready-to-use vaccines that are combined in one bottle, but all just before administration. Why this has to be done can have a multitude of reasons but are mostly related to stability issues of the freshly prepared combination. The stability is often just a matter of hours only. This makes proper timing important. Always prepare these types of vaccine just before administration!

To make real ready-to-use combination vaccines is not an easy thing to do. There are a number of factors that play a role. Firstly, of course, there is the issue of efficacy. Customers compare the efficacy of the combination vaccine to the single component vaccines that they replace. Secondly, safety is of prime importance and lastly it is the shelf-life of the combination. In all these three aspects interference may take place between the antigens or with the adjuvant that is selected for the combination. Often compromises have to be made that may result in a lesser efficacy for one of the components in the combination. Customers have a tendency to accept these shortcomings of the combination because of the convenience that they offer. The economic advantage of the labour savings hopefully compensates for the lesser return of investment. The lesser immunity induced by the affected component can be improved by, for example, including more antigen in the combination or by choosing the adjuvant that fits that component best – all within the desired safety profile of course. But there are ways to compensate and minimise the initial drawbacks.

There are also differences in the regulatory requirements between Europe, USA and China. In Europe it is much more difficult to get combination vaccines registered compared to the USA, and very much so when compared with China (for domestic companies). For international travellers it is sometime surprising to see the variety of combination products that producers in the different places have access to.

Under practical conditions many vaccines are given at the same moment, sometimes on different locations of the pigs (right and left side of the neck for example) or are combined just before administration, without having these specific claims on the leaflet. This is all off-label use and the veterinarian or farm manager or owner is fully responsible for these actions. It is advisable to check both safety and efficacy when these practices are done. Why? Simply because the data is missing.