

Organic selenium vs. its combination with sodium selenite in poultry nutrition: food for thoughts – Reply

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Recently, we received the letter “Organic selenium vs. its combination with sodium selenite in poultry nutrition: food for thoughts” commenting on our paper “The mixed application of organic and inorganic selenium shows better effects on incubation and progeny parameters” (Wang et al., 2021). This research compared the effects of 3 different dietary selenium supplements on production performance, reproductive performance, and maternal effect of laying hens. The data indicated that SeMet was more effective than SS in the laying hen diets, which was consistent with previous findings (Payne et al., 2005; Leeson et al., 2008; Delezie et al., 2014). A combination of SS + SeMet provided additional effects on incubation and resulting progeny compared with SS. Therefore, replacing some organic selenium with inorganic selenium in supplementation may be feasible to.

The combined application of inorganic and organic selenium has been proved to be more efficient. Han et al. (2017) reported that the diet with added equal amounts of the 2 selenium sources was more cost effective than a comparable amount of selenium yeast to achieve promising production performance and nearly similar selenium deposition. The assimilation of inorganic and organic selenium needs GSH and a carrier for transport, respectively (Gammelgaard et al., 2012). Although many studies have shown that organic selenium is assimilated more readily than inorganic selenium, the joint application of 2 selenium sources may produce higher absorption efficiency and production performance because competition during absorption has been relieved (Han et al., 2017).

Our data (Figure 2 in Wang et al., 2021) showed elevated selenium deposition with SS+SeMet, because yolk

has been believed to be the main deposition site. Further research should be done to verify the findings. It is also well known that the effects of organic selenium are better than those of inorganic selenium (Mahan and Peters, 2004; Bakhshalinejad et al., 2019), but the higher dietary cost is a limiting factor for application (Han et al., 2017). The primary findings are the maternal effects of the organic and inorganic selenium. The results revealed beneficial effects on hatching and offspring.

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