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## Effect of Dietary Organic Selenium Supplementation on Japanese Quail Growth and Carcass Traits

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### Abstract

This study was primarily focused on the effect of organic selenium (Se) supplementation on growth and meat quality , Se contents in feather, blood, liver, breastq and thigh meatq, GSH-PX activity and lipid peroxidase (TBA reaction method) on Japanese quail. The main results are summarized as follows:

1. Source of organicq Se significantlyq affectedq ( $P \leq 0.05$ ) all performance traits, except mortality%. Availa had significantly heavier LBW35, higher Gain7-35, GR7-35, but lowerFI7-35, better FC7-35 and had the highest EEf and REEf followed by Bioselena and Selvail in a descending order.
2. Level of Se supplementation significantly influenced LBW35, Gain7-35 , FI7-35,EEf and REEf favoring the 0.0 level for both LBW35 and Gain7-35 and from the economical point of view, Availa 0.1 had lower FI7-35 and higher EEf and REEf indicating the positive effect of improving the antioxidant defense in the experimental diets.
3. Average relative carcass characteristics to BW before slaughtering and

chemical composition are slightly affected by both the source and level of organic Se and source x levels interaction.

4. Availa had the lowest GSH-Px activity and the highest TBA of breast and thigh meat whereas both Selvail and Bioseleno had higher GSH-Px activity and Selvail had the lowest TBA of breast and thigh meat. The level 0.5 had the highest GSH-Px activity and TBA of thigh muscle indicating that the bioavailability of 0.5 level of tested organic sources of selenium was higher than other levels.

5. The level 0.5 had the highest Se contents in the diets, breast and thigh meat, values of excrements and feathers. The highest Se found in liver for level 0.1, both 0.0 and 0.3 levels had higher Se in whole blood. Whereas, both the level of 0.0 and 0.1 had lower Se in all of diets, liver, thigh muscle, excrements and feathers than other levels of Se supplementation. Selvail 0.5 had significantly higher estimates of Se contents in diets, breast and thigh meat, liver, excrements, feather and whole blood whereas, 0.0 of all tested sources had lower Se in diets and excrements, Selvail 0.1 had lower Se in both of breast and thigh muscles than other source x level groups.

6. The activity of GSH- PX in meat was increased (in birds fed Availa, Bioseleno and Selvail) and malondialdehyde content decreased in quail meat that had been fed Se-enriched diets as Bioseleno or Selvail.

7. we can concluded that the dietary Organic Se supplied in diets as Availa with the level of supplementation 0.1 can be used to improvement Se status in Japanese quail which may result in greater resistance to oxidation and resulted in high LBW<sub>35</sub>, Gain<sub>7-35</sub>, EEF and REEF from other sources according to levels without deteriorating growth performance and meat characteristics.

**Key words:** Organic selenium, levels, growth, carcass traits and Japanese

quail.

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