# The effect of Supplementing AGRADO on Bovans Brown Hen Performance, Egg Quality and Behavior

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***Introduction:***

Agrado® is an antioxidant (ethoxyquin, propylene glycol and propyl gallate) with functions in reducing lipid oxidation and preventing harmful free radical formation that negatively impacts health and productivity in animals. The antioxidant/pro-oxidant balance can be positively affected by dietary supplementation. Previous research has discovered the combination of ethoxyquin and propyl gallate could reduce the negative effects of oxidatized oil on broiler performance. Generally, road transportation is considered stressful to animals. Stress can have negative impact on growth, production and behaviors. Researches also found negative results of stress events on consummatory behaviors in mammals.

***Objectives:***

This study aimed to determine if different concentration of dietary supplementation (control, regular commercial diet; low, 200 ppm; medium, 400 ppm; and high 600 ppm, respectively) of Agrado improves hen performance, egg quality, and behaviors following transportation and rehousing, and investigate the most efficient concentration of dietary Agrado.

***Results:***

The BW was reduced in all hens following the transportation and rehousing, however, compared to controls, medium treated birds tended to lose less ($P$ = 0.06), no differences was found in eating behaviors ($P$ > 0.1) and feed intake data ($P$ > 0.1). Egg production was increased in all treated hens compare to controls ($P$ < 0.001), but without dose effects ($P$ > 0.1). The incidence of broken eggs was greatest in the control group compared to treated hens ($P$ = 0.0004), but without dose effects ($P$ > 0.1). For behavior parts, the medium group hens exhibited more drinking behaviors, together with less stereotypic behaviors ($P$ = 0.001) than controls. No difference was found in low and high groups ($P$ > 0.1).

The data suggest that dietary supplementation of Agrado have positive effects on hen performance, egg production and behavior parameters. The Agrado concentration at 400 ppm could be an ideal dietary antioxidant supplementation for improving the hen well-being.

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