

## **Effect of diatomaceous earth on parasite load, egg production, and egg quality of free-range organic laying hens.**

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### **Abstract**

The effectiveness of diatomaceous earth (DE) as a treatment against parasites and to increase feed efficiency and egg production of organically raised free-range layer hens was evaluated in 2 breeds of commercial egg layers [Bovan Brown (BB) and Lowmann Brown (LB)] that differ in their resistance to internal parasitic infections. Half the hens of each breed were fed diets supplemented with DE (2%). Their internal parasite loads were assessed by biweekly fecal egg counts (FEC) and by postmortem examination of the gastrointestinal tract. Supplementing DE in diets of LB hens, the more parasite-resistant breed, did not significantly affect their FEC and adult parasite load. However, BB hens treated with dietary DE had significantly lower *Capillaria* FEC, slightly lower *Eimeria* FEC, fewer birds infected with *Heterakis*, and significantly lower *Heterakis* worm burden than control BB hens. Both BB and LB hens fed the diet containing DE were significantly heavier, laid more eggs, and consumed more feed than hens fed the control diet, but feed efficiency did not differ between the 2 dietary treatments. Additionally, BB hens consuming the DE diet laid larger eggs containing more albumen and yolk than hens consuming the control diet. In a subsequent experiment, the effectiveness of DE to treat a Northern fowl mite (*Ornithonyssus sylviarum*) infestation was tested. Relative to controls, both breeds of hens that were dusted with DE had reduced number of mites. The results of this study indicate the DE has the potential to be an effective treatment to help control parasites and improve production of organically raised, free-range layer hens.