



Premium Lean Turkey Meat through Hydroponic Barley and Aromatic Herb Formulations GreenBarley Turkey Labs

Nabila Berrighi^{1*}

¹Laboratory of Biotechnology Applied to Agriculture and Environmental Preservation, Higher School of Agronomy, Mostaganem, 27000, Algeria

Abstract

Turkey breeding greatly benefits from hydroponic barley (also known as hydroponic sprouting fodder) and medicinal herbs, which provide notable enhancements in dietary intake, gut health, and cost effectiveness. This study evaluates the impact on the textural profile and amino acid content of turkey meat when regular feed is combined with hydroponic barley and *Alpinia galanga*, aromatic medicinal plants. Two groups of Turkey breeds grown on the same farm in the Mostaganem area participated in the study; the groups were created based on the percentage of HB rate integration and *Alpinia galanga* medicinal plants. The experimental groups animals had lower levels of total fat in their meat compared to the control group. However, the meat of Turkey fed hydroponically grown barley (HB) and aromatic medicinal plants had a much greater ($p<0.05$) and more abundant concentration of crude protein and ash contents. The amount of antioxidant activity in meats from each group varied significantly with predominance in the turkey meat fed a mixture of hydroponic barley and aromatic plants. The treated meat also received higher sensory scores by tasters according to its flavor, juiciness and taste than the meat from the control group ($p<0.001$). The combination of hydroponically grown barley and aromatic plants is essential for improving meat quality by enhancing antioxidant qualities and sensory aspects. Additionally, it increases the efficiency and sustainability of meat production by reducing production costs by replacing expensive conventional feed ingredients.

Keywords: Antioxidant activity, breeding system, hydroponic Barley, sensory quality, Turkey meat

