

AN EVALUATION OF JERUSALEM ARTICHOKE (*HELIANTHUS TUBEROSUS* L.) UTILIZATION AS A BENEFICIAL FEED INGREDIENT TO MITIGATE HEAT STRESS IN PIGS

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Abstract

*It is very important to understand, quantify and mitigate the physiological impact of heat stress in pigs. For pigs, the thermal comfort zone temperature ranges between 18 and 25°C. Thermal stress negatively affects the function of the intestinal barrier, inflammatory response, postabsorptive metabolism, directly affecting growth performance and carcass quality causing a serious acid-base imbalance, poor feed conversion, low nutrient intake and high mortality. Jerusalem artichoke (*Helianthus tuberosus*) is a valuable plant resource due to its yield (10-15 t/ha of tuber production), and a functional food ingredient with nutraceutical properties due to its chemical composition, mineral and vitamin profile, and antioxidant activity. It is a highly productive and easily grown crop that can last for years into soil. It is also a beneficial prebiotic source with a high inulin content (75% of the carbohydrate complex). Jerusalem artichoke tubers can be administered fresh or powdered with positive effects on intestinal microflora. Jerusalem Artichoke improves the microbial content and the defense and regeneration process of the gut. This study aims to achieve a comprehensive analysis of the importance and need of using Jerusalem artichoke as a beneficial and affordable feed ingredient in combating the negative effects of heat stress on pigs.*

Key words: *Jerusalem artichoke, pigs, heat stress, inuline, intestinal microflora*