

EFFECTS OF INCLUDING *HELIANTHUS TUBEROSUS* IN THE DIET OF LAYING HENS**Moroz Mihail, ORCID: 0000-0003-4596-5933****Balan Ion, ORCID: 0000-0002-5431-6057****Cociu Valeriu, ORCID: 0000-0001-9346-4653****Matencu Dmitrii, ORCID: 0000-0002-1814-0146****Starciuc Nicolae, ORCID: 0000-0001-5176-8499****Gurdis Viorica ORCID: 0000-0002-1296-3125****Ceban Elena, ORCID: 0009-0007-8396-8436****Voinitchi Eugen, ORCID: 0000-0003-2167-5616****Cretu Roman, ORCID: 0009-0007-9172-6462****Muntean Tamara, ORCID: 0009-0006-0115-1785***Technical University of Moldova, Chisinau, Moldova**E-mail: mihaimoroz86@gmail.com*

The results of studies investigating the inclusion of Jerusalem artichoke (*Helianthus tuberosus*) meal in the diet of laying hens and its effects on the essential physiological indicators of their clinical status revealed certain variations. During the pre-experimental period, the hens' body temperature was identical (41.4–41.5°C), remaining within the normal physiological range for adult laying hens, which confirms a stable clinical condition. During experimental period-I (0.5% Jerusalem artichoke meal) and experimental period-II (1.0% Jerusalem artichoke meal), body temperature showed only minor, statistically insignificant variations, remaining between 41.7 and 41.8°C. This stability demonstrates the good tolerability of Jerusalem artichoke flour at the tested inclusion levels. Respiratory rate during the pre-experimental period showed similar values among the groups (22.4–24.2 breaths/min), corresponding to a normal physiological state. Dietary supplementation with 0.5% Jerusalem artichoke meal during experimental period-I resulted in an increase in respiratory rate in experimental group 1 to 25.3 ± 0.48 breaths/min ($P < 0.05$). During experimental period-II (1.0%), respiratory rate increased to 26.8 ± 0.32 and 28.4 ± 0.53 breaths/min in experimental groups 1 and 2, respectively ($P < 0.05$). Heart rate values during the pre-experimental period (257–266 beats/min) indicated a normal physiological cardiovascular status. During experimental period-I, a tendency toward increased heart rate was observed, while in experimental period-II, heart rate increased in experimental groups 1 and 2 to 278.5 ± 3.22 and 287.2 ± 3.97 beats/min, respectively ($P < 0.05$). The birds demonstrated stable body water balance through adequate hydration and the absence of hydroelectrolytic imbalances. Oxygen saturation showed a slight increase in blood oxygen levels throughout all stages of the experiment. The overall clinical condition of the laying hens during all experimental periods was assessed as “good.”

Therefore, the values of body temperature, respiratory and heart rates, hydration status, blood oxygenation, and overall clinical condition indicate the occurrence of adaptive and physiological processes characterized by intensified metabolism, stimulation of digestive activity, and an increased oxygen demand.

Keywords: *laying hens, Jerusalem artichoke, clinical status.*