POSSIBILITIES TO REDUCE THE GREENHOUSE GAS CALCULATED EMISSIONS BY SPEEDING UP THE CALF AND KID DEVELOPMENT

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Abstract. *Ruminants emit more greenhouse gases than single-chamber stomach animals. Shortening the calf and kid fattening time and gaining a greater amount of high-quality dietary meat, can significantly reduce greenhouse gas emissions (GGE). Prebiotics can be one of the possible alternatives to prevent diseases, ensure good health and stimulate the growth of the animals. Studies have been conducted to find out the effect of the feeding of calves and kids with artichoke concentrate produced in Latvia containing the prebiotic – inulin (48.5-50.1%). The study was performed on two calves' (23±5 days old) and two kids' groups (14±5 day old) of animals: control group (n=8) and test (prebiotic) group (n=8). All the animals were fed equally, but in test group calves received additionally 12 g and kids 4 g of artichoke powder per day. Once a day general health was checked, including faecal mass consistency evaluation (Larson et al., 1977). After the planned slaughter (56th day of the study) carcass, rumen and abomasal weight measurements were made. We found out that the calves and kids of the test group had less diarrhea cases than control animals. In calves' control group the carcass weight was 43.57±8.16 and in test group it was 49.14±8.07, thus, on the 56th test day it was higher ($p<0.05$). Also kids' test group carcass was higher ($p<0.05$) than for the control animals (respectively 5.8±0.37 and 4.2±0.56). We concluded that the use of Jerusalem artichoke flour concentrate containing the prebiotic inulin when fed to the calves and kids generally gives positive impact on the development and growth of the animals, improves the functional status of the gastrointestinal tract and the morphometric indicators. Making more effective food intake and, possibly, also the digestibility, GGE could be reduced. The study was conducted by National research programs within AGROBIORES. Research is still continued.*

Key words: *calf, kid, development, inulin.*