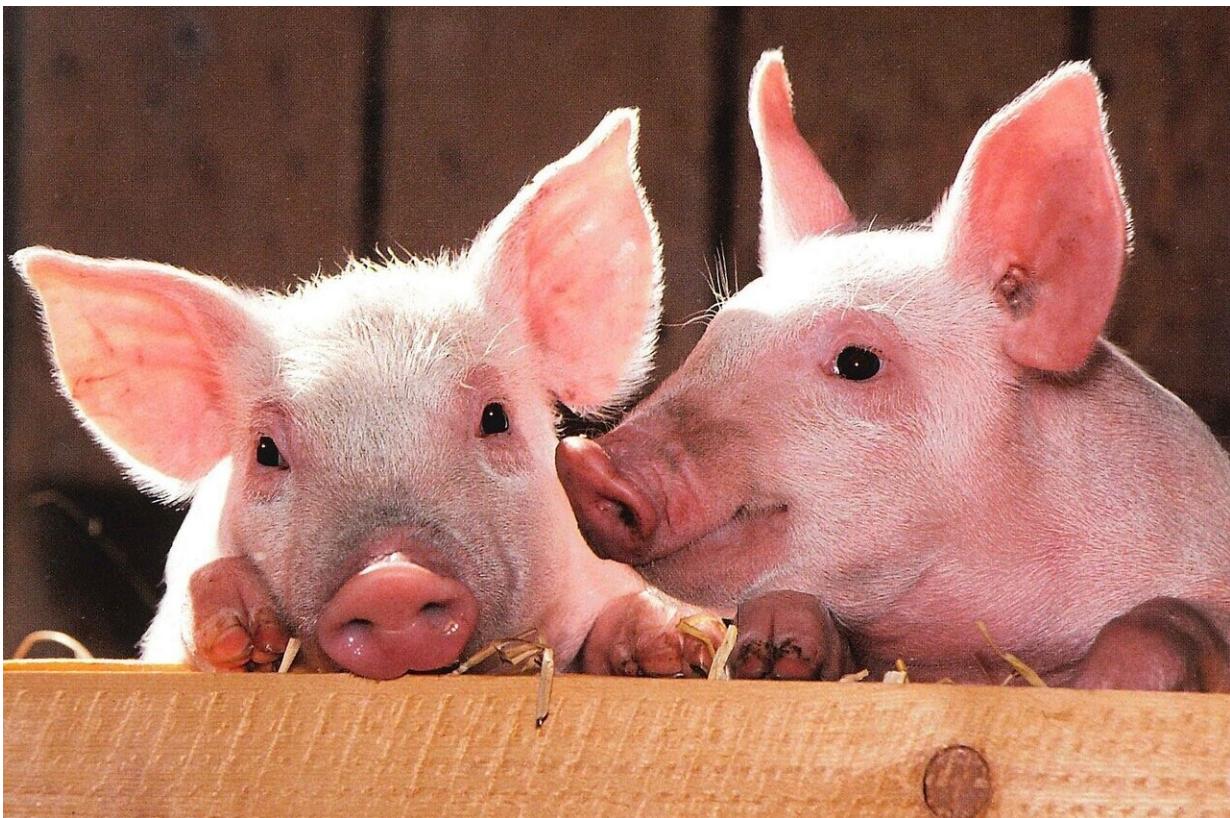


# **N-carbamylglycinate in late gestation improves reproductive performance in sows**

July 1 2020, by Li Yuan



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Recently, a research team led by Dr. Wan Dan from the Institute of Subtropical Agriculture (ISA) of the Chinese Academy of Sciences investigated effects of N-carbamylglycinate (CGly) on

reproductive performance of sows in the late gestation. CGly is a derivative of glycine and an analog of N-carbamylglutamate. The study was published in *Food & Function*.

They found its novel nutritional roles in amino acid metabolism, which could improve the reproductive performance in sows in this period.

In this study, 32 pregnant sows were randomly divided into two groups, the control group and the treatment group (CGly, 800 mg kg<sup>-1</sup>).

The researchers found that CGly supplementation to sows in late pregnancy improved the litter size, litter weights and the content of amino acids in the serum of sows, especially glycine, proline and ornithine.

Litter weight in the two groups was 16.63 kg for the control group and 18.81 kg for the CGly group, respectively. In addition, CGly group had a higher number of live offspring.

Compared with the control group, concentrations of glycine, proline and ornithine were higher in the CGly group. Ornithine is closely related to proline metabolism. Thus, supplementation of CGly may improve the nutrient levels of proline and glycine in sows, and then improve the birth litter weights.

Furthermore, in vitro studies showed that the increase of proline level may be attributed to the increase of SLC6A20 and SLC38A2 mRNA expression in monolayer IPEC-J2 cells by both CGly and glycine.

The nutrient requirement is increased in the late-gestation period due to the faster growth of the fetal-placental unit and the expansion of the maternal erythrocyte mass. Glycine, proline and arginine are important amino acids to promote the growth and development of the fetus.

**More information:** Dan Wan et al. Dietary supplementation with N-carbamylglycinate (CGly) improved feed source proline absorption and reproductive performance in sows, *Food & Function* (2020). [DOI: 10.1039/c9fo01940e](https://doi.org/10.1039/c9fo01940e)

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