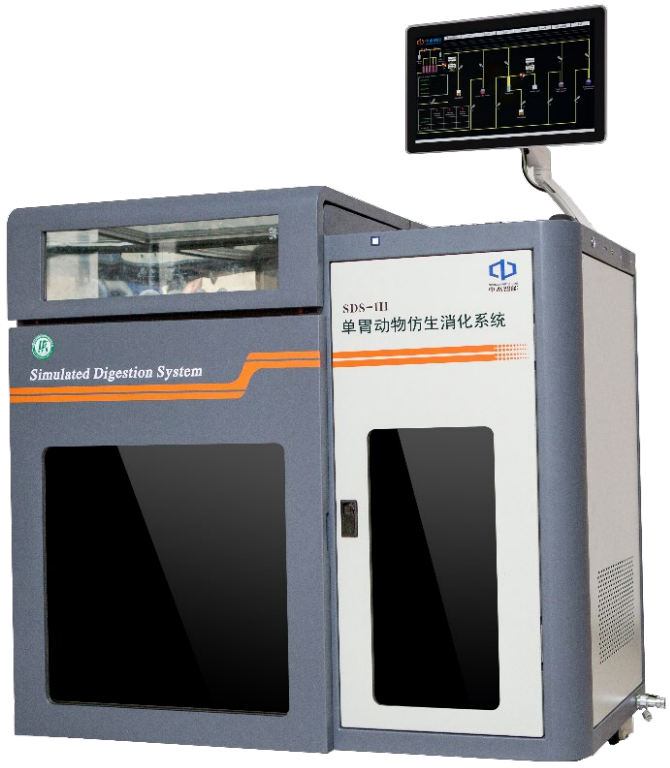
The most cutting-edge technology of simulated digestion for monogastric animals

Developed by IASCAAS + Zhongben

Simulated Digestion System （SDS III）



Global Marketing Partner (Overseas)

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How to accurately, quickly and repeatably evaluate the nutritive value of feed ingredients?

How to evaluate the enzymolysis efficacy of different single enzymes on various feed materials?

How to rapidly evaluate the compound enzyme preparations from the market and screen the most suitable compositions of enzyme products?

Animal experiments need a long cycle and high cost, and the experimental data are susceptible to many uncertain factors such as climatic conditions, animal body conditions, and feeding conditions. How to solve these problems?

Simulated Digestion System (SDS III) provides reliable solutions

Simulated digestion system (SDS III) for monogastric animals has been jointly developed by Institute of Animal Science, Chinese Academy of Agricultural Sciences (IASCAAS) and Hunan Zhongben Intelligent Technology Development Co., LTD. It is a patented technical solution to simulate the digestive process of monogastric animals, based on bionic principles. SDS III includes a device that can simulate the digestion and absorption process of feed in the digestive tract, and the matching kit of simulated digestive fluid. SDS III uses feed as a substrate to simulate the digestion and absorption process of in vivo gastro-intestinal tract with high fidelity and repetition. Compared with the in vivo methods, SDS III can accurately and quickly determine the effective energy, digestibility of amino acid and phosphorus in feed, offering 66 times higher efficiency and reducing costs by 90%, and realize the standardization, instrumentalization and automation of the simulated digestion method.

100+

Agricultural and Animal Husbandry Enterprises

150+

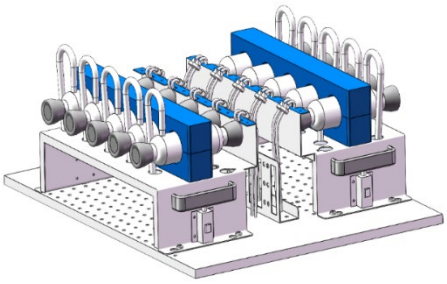
Serves Million Tons of Feed Production

SDS III

Serves Feed Industry Globally

Automatic Simulated Digestion System (SDS III)

- **PC-based Automatic Control**
- **Dual-modules Compatibility: Vertical and Horizontal**

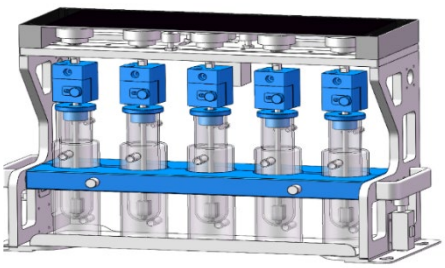


Horizontal Digestion Module

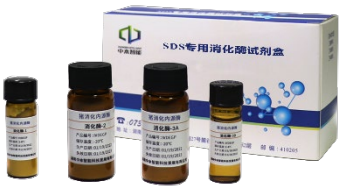
- Automatically executes the digestion steps of stomach, small intestine and large intestine; Automatically adds simulated digestive fluid and automatically cleans the digested byproducts.
- Overcomes the residual problem of feed, eliminating the need for sample migration.
- Highly simulates the digestive condition of in vivo;
- High simulation precision: repeated tests CV < 1.5%;
- Measure the biological utilization of nutrients by simulating the digestion and absorption process of nutrients in the gastro-intestine tract of animals

Vertical Digestion Module

- With an independent motor, the mixing speed is adjustable; Automatically executes the digestion steps of stomach, small intestine and large intestine; Automatically adds simulated digestive fluid
- Double glass structure reaction tube, circulating water constant temperature, comparable digestive condition to those of in vivo;
- High simulation precision: repeated tests CV < 1.5%;
- Suitable for in vitro digestion evaluation of feed enzymes;



- **Simulated Digestive Kits for Swine and Poultry**
  - Patented technology for producing target animal-derived digestive enzymes;
  - 1:1 simulation of in vivo digestive enzyme activity;
  - Breed specialization;



Outstanding Application

Explore the Application of SDS III

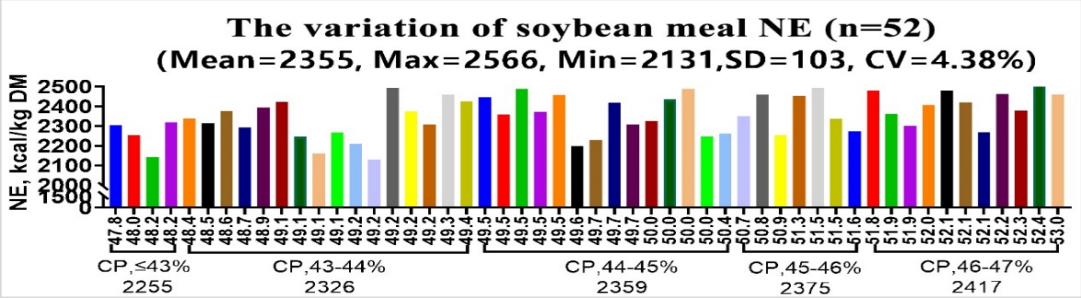
- Effective Energy Evaluation;

  Assessing the nutritive values of feed ingredients is a critical scientific decision basis for estimation of their price and optimizing feed formula. The SDS III is used to rapidly identify the nutritive values of feed ingredients, complete diets, and screen enzyme combinations suitable for different feed ingredients, thereby improving feed utilization and reducing feed cost.

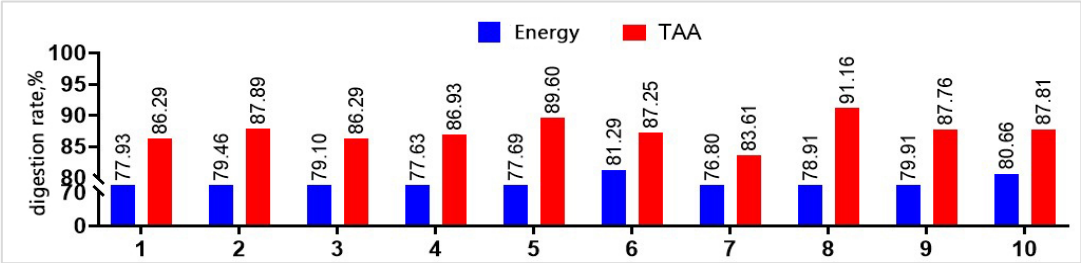
- Amino Acid Digestibility Evaluation;
- Efficacy Evaluation of Feed Enzyme;
- Enzymology Properties Research of Feed Enzyme;
- Rapid Screening of Feed Enzyme Formulations;
- Products Research/Development/Efficacy Evaluation for Improving the Digestion of Nutrients in Feed;
- Research on Digestion Dynamics of Nutrients in Feed;

Application Cases

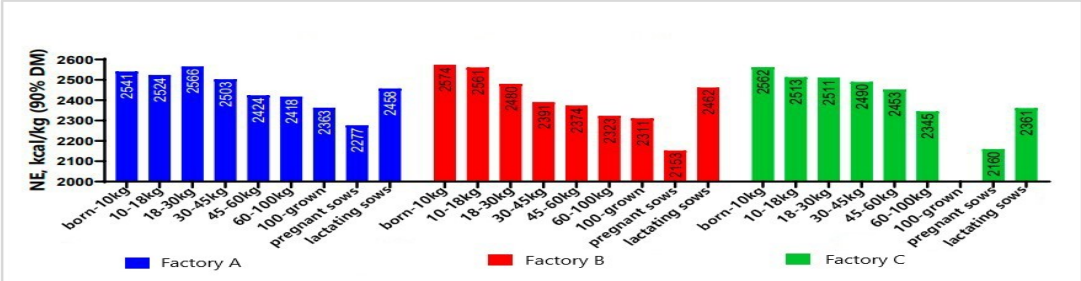
- Establishment of Dynamic Database for Feed Ingredients



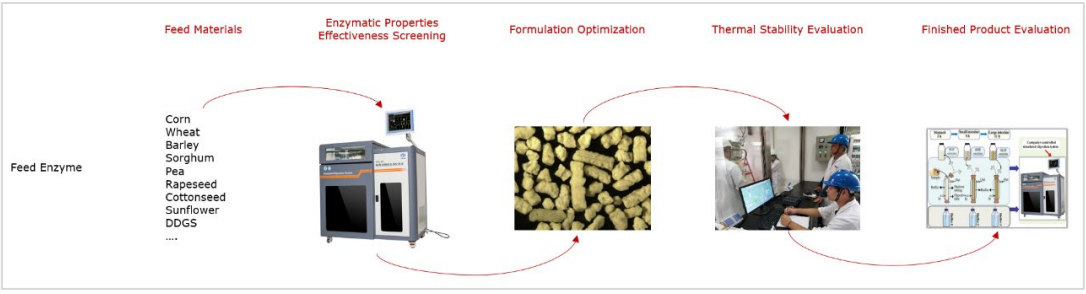
- Quality Monitoring of Feed Ingredients



- Nutritional Quality Monitoring of Complete Diet



- Efficacy Evaluation of Feed Enzymes



Together With SDS III

Explore Your Future Successes

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