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Do you trust Nature?

Natural herbal solutions are more than a trend

Production systems and feeding regimes are more and more at their limits. Antibiotics are used for cases they were not developed for. Consumers nowadays criticize animal production with increasing disapproval. The use of herbs in nutrition to support health is as old as civilization. The reintroduction of herbs into the daily ration of our livestock may contribute to meet new demands of the industry and the consumer.

A natural concept to face the future

The use of herbs has been part of tradition in many cultures for a long time. Ancient concepts of using herbs and plants to support and maintain health come from Asia. The basic idea is that the body of a man or an animal is intelligent and seeks health by itself if it is well supported. Health is defined as a dynamic state and not only the absence of disease as in conventional medicine.

A promising concept is the traditional applications of herbs in India. It is a complete maintenance and care system which involves detoxification, diet and the use of herbs to improve health. The challenge is how to apply this ancient expertise to today's high producing animals. To keep them in a good and healthy condition is a big challenge for most farms. Moreover, healthy animals do not have to be medicated. This saves costs and makes the production of animal products profitable, fitting perfectly to actual consumer demands.

A key element using herbs in nutrition is to support a well-balanced health status, both internally (flow of nutrients and their metabolism) and externally (bacteria, parasites, toxins). Well-selected herbs and plant materials are mixed in such a way that the main nutritional ingredients and also secondary plant compounds remain active. These herbal bio-complexes are acting on vital organs of the body: the liver as the centre of vitality, the nervous system (stress factors) and the nutrient absorption in the intestinal tract.

How to apply herbal bio-complexes in animal feed formulations

The first step is to use the knowledge about distinct plants before mixing them to bio-complexes for a certain purpose. Among these plants, as an example, *Andrographis paniculata* (Acanthaceae) and *Azadirachta indica* (Meliaceae) are reported to support liver metabolism and immunity.

Andrographolides is one of the most documented active compounds of *Andrographis paniculata*. Their hepatoprotective power is proven in-vitro. These compounds have shown a very high protective activity against induced toxicity on isolated liver cells (1). In a second test it was evaluated to antagonize the toxic response on certain enzymes (GOT, GPT and alkaline phosphatase). Andrographolides were also found to be more potent than silymarin from *Silybum marianum* (milk thistle), a common hepatoprotective agent (2).

A healthy liver is among the most critical elements in the body. Among other vital functions, the liver is responsible for eliminating toxins. It also produces bile, which is essential in the breakdown of fats. Liver functioning is also key to the immune system. To cover such a broad range of requirements, products with many ingredients are required.

Using herbal bio-complexes in animal production lead to good animal performance. Using such herbal preparations in a feed formulation can replace other products or molecules. A broiler trial in a research farm in Switzerland underlined the potential of pure plants in broiler rations compared to commonly used broiler feed. 350g of herbal solution per ton was mixed into the feed and compared to a commercially available boiler feed. The trial feed contained no added choline or betaine. The birds received the herbs from day 1 until the day of slaughter at an age of 42 days. The overall feed consumption per bird was 3510 g in the control and 3533 g in the trial group respectively. A significant difference in body weight and feed conversion was measured ($p < 0.05$): control 2052 g and 1.74 and in the trial group 2132 g and 1.68 respectively. In addition, the economic performance was positive, expressed with the European Broiler Index EBI (EBI = daily gain x mortality / 10 x FCR): 298 points in control and 322 points in the trial group.

These results illustrate the potential of herbal mixtures. Herbal mixtures are more comprehensive formulations, containing a richer range of actives that may improve digestibility, are antimicrobial and anti-inflammatory, anti-oxidant and immunostimulant.

Keeping livestock in good health conditions is the base for a sustainable and consumer oriented animal production. Herbal mixtures, well-designed and strictly controlled for quality consistency will be a key to unlock the full genetic potential of modern breeds and to cover the high expectations of consumers for tasty and healthy food. In addition, the risk of resistance development in pathogens against widely used drugs will accelerate the application of herbal mixtures in animal nutrition, and will have a leading role in future developments.

References:

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