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The Technology of obtaining Water Extracts from Herbs and Plants of Tropics and Subtropics and their Influence on the Greenhouse Gases Emissions and the General Health of Animals

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Abstract

This work describes problems concerning obtaining of extracts from herbs and plants with a water-extraction technology. It gives a detailed description of the unique technology, its pros and cons, possibilities of utilisation (usage of the water extracts not only in many branches of agriculture – fertilisation and feeding additives – but also in spheres of industry, pharmaceuticals, spa, wellness, etc.), as well as a review of plants, which were used for the preparation of water extracts that are further being studied in consequent research, which focuses on the usage of these plant-water-extracts as a substitution for chemical food additives – especially for the reduction of greenhouse gases (GHG) and ammonia and subsequently also for improvement of the general animal health and well-being. It is divided in several consecutive steps. The first phase was to find proper plants that would fit most in the desired concept of GHG reducing and health improving food additives, which lead to former researches that showed that mainly plants with high saponin content (like for example *Yucca* or *Hedera helix*) reduce the GHG emissions by animals and that *e.g. Urtica dioica* and *Artemisia abrotanum* were examined many decades ago as a supplement for animal health and wellbeing improvement. In the next stage the water-extracts are being produced and characterised. Subsequently the most suitable extracts will be applied *in vivo* – to the experimental herd and the GHG emissions and health changes will be recorded. In the end of the project, all collected data will be evaluated and consideration of pros and cons of the water-extracts as food additives as well as possibilities for additional research, usage and transfer to less developed countries will be done.

Keywords: Ammonia, feeding additives, gain from feedstuffs, GHG, greenhouse gas, pasteurisation, water extract, wellbeing