



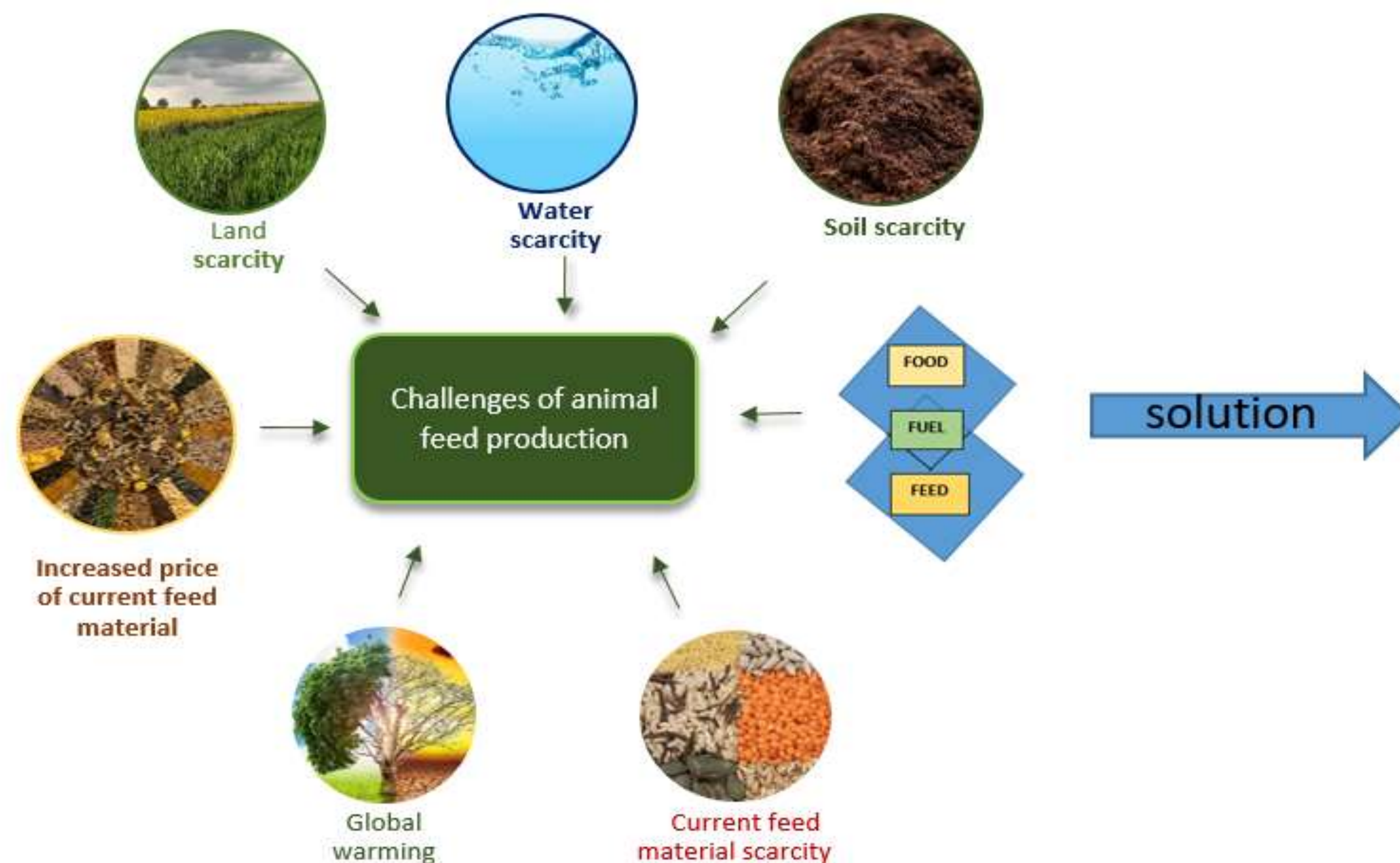
# Sustainable use of plant waste for animal feed production

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## Introduction



## Results

Hempseed hull showed higher content of crude protein and crude fibre than sea buckthorn pomace.

Sea buckthorn pomace had a high concentration of iron and zinc, but lower comparing to hempseed hull. Hempseed hull had high amounts of iron, zinc and Manganese.

Sea buckthorn pomace manifested a considerable amount of beta carotene, vitamin E, vitamin B5 and B3 compared to hempseed hull while concentrations of vitamin B1, B2 and B6 were higher in hempseed hull.

Regarding, amino acid content, 37 amino compounds were detected in both hemp seed hull and sea buckthorn pomace. Higher amounts of glutamic acid, glycine and GABA were detected in hempseed hull, while sea buckthorn pomace showed higher amounts of asparagine.

Gas in vitro digestibility showed better digestibility of sea buckthorn pomace comparing to hemp seed hull.

## Objectives

The objectives of vegetal waste utilization in animal feed production are

- decreasing the price of animal feed,
- achieving sustainable animal feed production,
- reducing the environmental pollution related to vegetal waste disposal and
- reducing economical costs of agrifood industries.

## Methodology

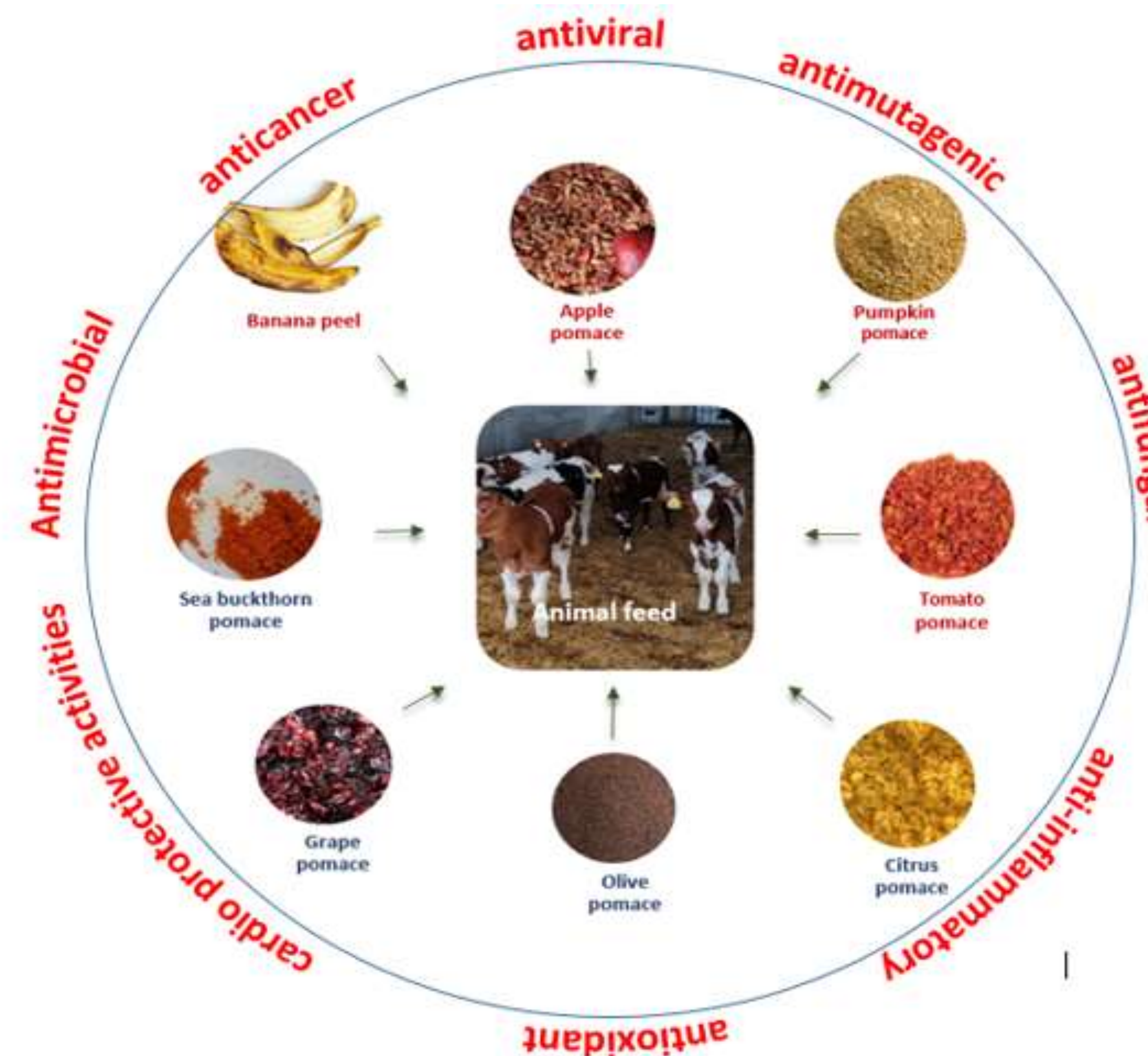
**Hempseed hull** and **Sea buckthorn pomace** samples were freeze-dried and ground into powder

**Analyses performed:** Proximate analyses (dry matter content, moisture content, ash content, crude protein, crude fat, crude fibre and Nitrogen free extractives, metabolizable energy, metabolizable protein, mineral, vitamin content, fatty acid and amino acid content, gas in vitro digestibility method and antioxidant analyses.

All analyses were performed using established methods.

The preparation for antioxidant analyses involved both conventional solvent and non conventional ultra sound extraction with different parameters: **time and amplitude**. Conventional extraction involved **different percentage of solvent and weight of samples**.

**For analyses of amino acid content parameters**



## Conclusion

Based on the results, both hempseed hulls and sea buckthorn pomace show potential in being added to livestock feed.

However, additional analyses on bioactive compounds in these by-products as well as their digestibility in livestock need to be evaluated to understand their potential in the development of livestock feed better.

## Acknowledgment

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