

## An approach on the functional properties of mulberry leaves associated with yeast (*Saccharomyces cerevisiae*) for silkworm *Bombyx mori* feeding

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### • INTRODUCTION

A beneficial modern technology that can raise the economic value of cocoons is the fortification of mulberry leaves with additional bioactive compounds.

Numerous studies have demonstrated the positive effects of yeast on economic indicators and health status in silkworm fifth instar.

### • MATERIAL AND METHOD

The online database publications were used. The English scientific literature was taken into consideration, such as MDPI, PubMed, Research Gate, Google Scholar, and Elsevier.

### • RESULTS AND DISCUSSIONS

Silkworms are insects sensitive to various disease-causing pathogens, environmental (temperature, humidity, hygienic and sanitary conditions) and the nutritional quality of the feed (Mustafa et al., 2019, Abdelmegeed et al. 2020).

Yeast is a good source of minerals, vitamins (especially B vitamins), lipids, carbohydrates, and amino acids, particularly lysine.

Yeast improve the cocoon, pupae and shell weight, shell ratio and the filament length, denier, and reeling of the silk.

It was demonstrated that the yeast treatment at 5% was significant in increasing the enzyme activity (Esaivani et al., 2014).

High effects on larval characteristics have been seen at 300 ppm yeast. The weight and length of the larvae were also found to differ significantly between concentrations of 100 and 200 ppm. The 300 ppm concentration treatment three times per day increases larval growth (Yadav and Bagdi, 2016).

### SELECTIVE REFERENCES

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### •OBJECTIVE

This review covers knowledge regarding the nutritional and functional characteristics of the mulberry leaves and yeast as well as their impact on the silkworms *B. mori*.

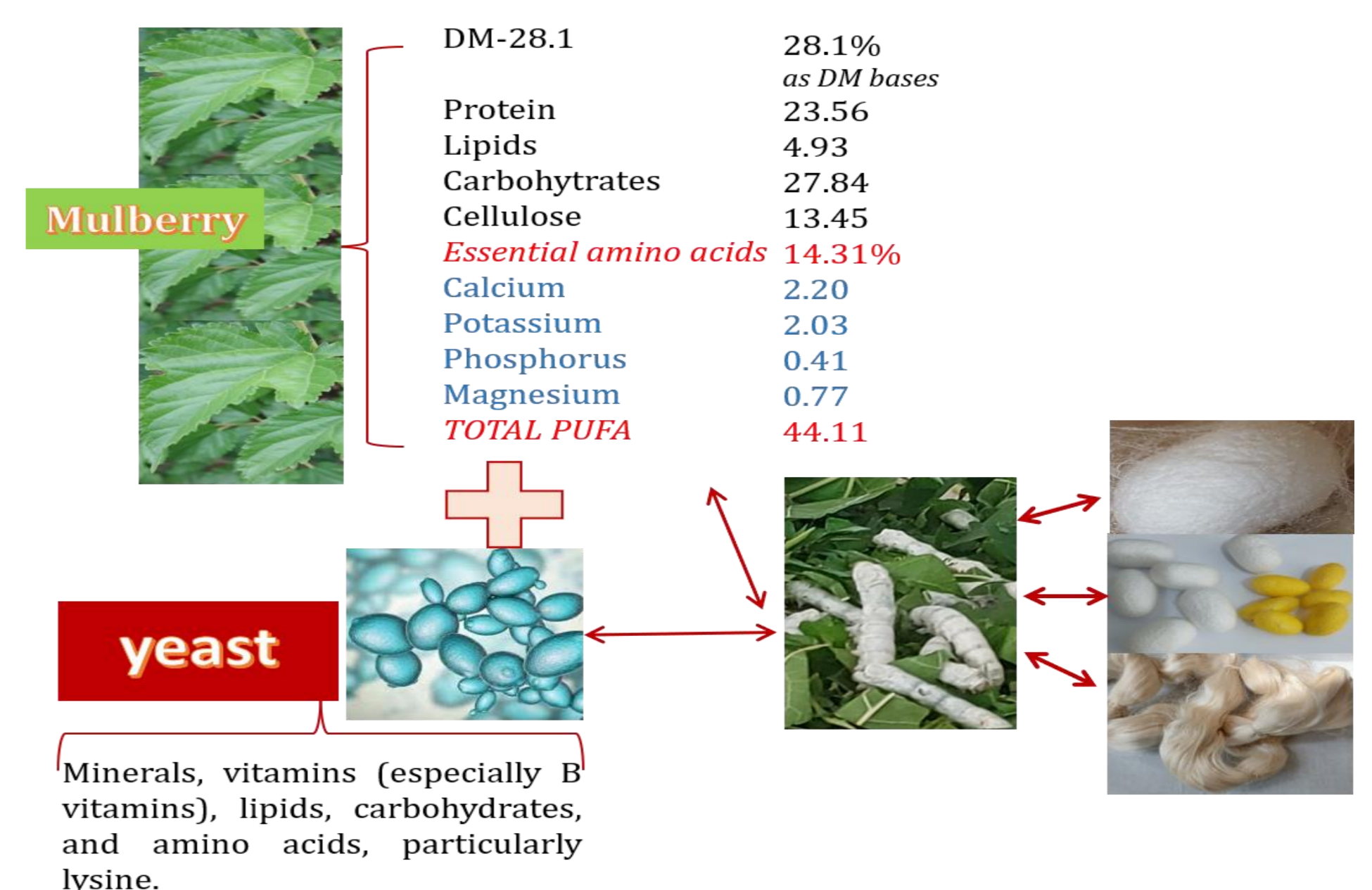


Fig. 1. Nutrients from mulberry leaves fortified by yeast addition

The addition of microbial additives to silkworm diets contributes to the remodeling of gut microbiota.

Gut-associated bacteria open doors for industrial applications in various industries, including biotechnology, agriculture, and disease therapy.

Even though mulberry leaves are nutrient-rich, the fortification of their active principles by using yeasts can be a valuable tool leading to improving the productivity of the sericulture sector.

### CONCLUSIONS

- ☞ Yeast (*S. cerevisiae*) is a good source of nutrients and bioactive compounds.
- ☞ Yeast can act as a probiotic, releasing digestive enzymes and modelling gut microbiota.
- ☞ Mulberry leaves rich nutrients composition is fortified by dietary yeast supplementation.
- ☞ This contribute to the improvement of the host immunological resistance and nutrition metabolism.

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