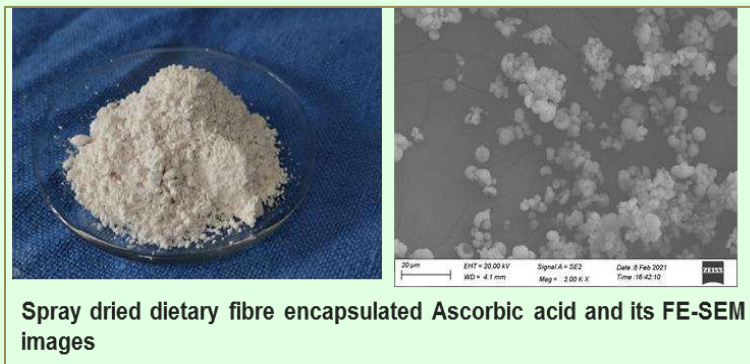


Encapsulation of Ascorbic acid using natural gum based dietary fibre

Vitamin C is the most important vitamin because it is a powerful antioxidant and immunomodulator for fishes. The fish body needs vitamin C to remain in proper health condition. Dietary vitamin C supplementation is reported to enhance growth and immune response in fish. Most of the fish feed lacks Vitamin C supplementation because of its unstable nature. Our study developed a stable encapsulated form of Vitamin C which have sustained release property as well as better bioavailability. The fish body needs vitamin C to remain in proper health condition. Dietary vitamin C supplementation is reported to enhance growth and immune response in fish.



Spray dried dietary fibre encapsulated Ascorbic acid and its FE-SEM images

Salient Features:

- The encapsulated vitamin C enriched dietary supplement/fish feed may enhance the fish productivity as well as the economic benefit of the farmer.
- Encapsulation of Ascorbic Acid (AA) with guar gum dietary fibre was achieved using spray drying technique.
- The encapsulation efficiency of the AA was optimized and 88% of the encapsulation efficiency achieved.
- The study of release kinetics of the encapsulated product revealed the controlled release pattern of AA in comparison to commercially available product.

Benefits:

- The encapsulated product may have better economic viability as well as cost effectiveness than the commercially available product with respect to quality as well as health benefits.
- The bioavailability study shows that the treatment with encapsulated AA feed shows highest accumulation of AA in the muscle and liver tissues of the fish.

Target market/Potential clients:

- The target market for the Vitamin C-rich aquaculture feed supplement includes fish farmers, feed manufacturers, aquaculture consultants, fish processing/export companies, and fish-farmer cooperatives.



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