MICROENCAPSULATION TECHNIQUE FOR SUNSCREEN GEL DEVELOPMENT: ENHANCING UV PROTECTION

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ABSTRACT

The current research looked at the sunscreen gel formulation using microbead technology via the ionotropic gelation method. Herbal oils such as jojoba oil and raspberry seed oil were used in our study due to their sun-protective qualities, which provide protection against both UV-A and UV-B rays. The pH, viscosity, stability, homogeneity, spreadability, extrudability, scanning electron microscopy and SPF determination of the prepared herbal sunscreen gel were also evaluated. Sunscreen gel has a pH range of 6.20-6.23, a viscosity range of 3060-3684 cps, and an extrudability study of 12-16. The F5 formulation demonstrated good spreadability, consistency, homogeneity, appearance, and pH, according to the evaluation, with no evidence of phase separation. During the study, the formulation F5 provided the best UV protection with SPF 11.