

ABSTRACT

Excessive UV exposure causes premature aging and skin cancer risk (Green & Murphy, 2019). Chemical sunscreens may cause irritation and environmental harm (Suryawanshi & Tiwari, 2020). This study develops an organic sunscreen lotion with tea leaf extract (*Camellia sinensis*) and carrot seed oil (*Daucus carota*), rich in antioxidants (Mandal et al., 2018). Various formulations were tested to optimize UV protection, skin hydration, and safety. Results showed that tea leaves, containing epigallocatechin gallate (EGCG), protect skin from oxidative stress (Xiao et al., 2020), while carrot seed oil with β -carotene enhances UV resilience (Mandal et al., 2018). The lotion has a balanced pH, light texture, and does not cause irritation. Stability tests confirmed the formulation remained homogeneous. Compared to chemical sunscreens, this lotion is more eco-friendly and suitable for sensitive skin (Park & Lee, 2021). This research confirms that natural ingredient-based sunscreen is an effective alternative for UV protection. Further studies should enhance SPF and long-term stability. Keywords: Organic Sunscreen, Tea Leaf Extract, Carrot Seed Oil, UV Protection, Antioxidants