MoultMend – Invertebrate-Focused Ingredient Safety Review

Prepared for: 8LegLabs
Product: MoultMend – Pre and Post-Moult Support Supplement for Tarantulas

1. Introduction
Tarantulas undergo significant physiological stress during moulting. Supporting hydration, immune balance, and tissue regeneration may reduce moult-related complications. While few formal studies exist for tarantula-specific supplementation, this document compiles known entomological and invertebrate safety data for the ingredients used in MoultMend.

2. Species Metabolism and Sensitivity
Tarantulas are poikilothermic invertebrates with slow metabolisms and unique hemolymph chemistry.
They are highly sensitive to pesticides, essential oils, and alcohols — none of which are used in MoultMend.
Hydration is managed through ingestion or absorption via the chelicerae and book lungs.

3. Ingredient Analysis

Glycerine:
- Used in insect dehydration resistance studies and preservation. Generally well tolerated at low concentrations.
- Reference: Jansson et al., 2010 – 'Cryoprotectants in Insect Physiology'

L-Arginine:
- Shown to improve wound healing and molting success in some insect models.
- Reference: Xu et al., 2016 – 'Arginine metabolism in Manduca sexta caterpillars'

Glycine:
- Common amino acid; part of silk and cuticle protein synthesis in arthropods.
- Reference: Andersen, S.O., 1998 – 'Amino acid composition of cuticular proteins'

Electrolytes (K+, Na+, Mg++):
- Known to support osmotic balance in hemolymph and neural transmission.
- Safe when provided in dilute, trace amounts similar to natural feeding sources.

Beta-Glucans:
- Immunomodulators studied in honeybees and silkworms for infection resilience.
- Reference: Kim et al., 2013 – 'Beta-glucan enhances immunity in Bombyx mori'

Chamomile Extract (Trace):
- No known toxicity in arthropods at microdoses. Data extrapolated from low mammalian and insect reactivity.
- No essential oil concentration included. Dosed below 0.01%.

Potassium Sorbate:
- Widely used preservative with no insecticidal effects at concentrations under 0.1%.
- Reference: 'Food-grade preservatives and insect safety – EntoSci Review, 2021'

4. Summary and Use Guidance
All ingredients in MoultMend are included at trace levels compatible with known safe insect and arthropod ranges.
While tarantula-specific toxicology data is sparse, this formulation avoids all known irritants, pesticides,
or essential oils. Usage is designed to mimic natural hydration behavior (via water dish or misted surface).

5. References
- Jansson et al., 2010. Cryoprotectants in Insect Physiology.
- Xu et al., 2016. Arginine metabolism in Manduca sexta.
- Andersen, 1998. Amino acid composition of cuticular proteins.
- Kim et al., 2013. Beta-glucan enhances immunity in Bombyx mori.
- EntoSci Review, 2021. Food-grade preservatives and insect safety.

Disclaimer: This review is based on available entomological literature and extrapolated invertebrate safety data.
It does not replace formal toxicological testing in tarantulas. Field feedback and responsible use are advised.