

ABSTRACT

Evaluating the Efficacy of Sixteen Surfactants for Removing Petrochemicals from Feathers

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New detergents are developed and existing products are reformulated on a regular basis. Periodic assessment of these products is necessary to ensure that the most effective products are used for decontaminating oiled wildlife. Sixteen surfactants previously determined (Ambrose & Tegtmeier 2015) to be subjectively effective at removing oil from feathers (based on appearance and water-repellency of the feather) were selected for this objective evaluation. This study used the methods developed and described in previous studies (Bryndza et al. 1991 and Miller et al. 2003) to assess these 16 products. Standard quantities of feathers were uniformly oiled with a synthetic oil-containing components found in many petroleum spills, then subjected to a 'washing' and rinse process with 1%, 2%, and 3% dilutions of each of the 16 products. The residue remaining on the washed feather samples was extracted with solvents and analyzed by gas chromatography to determine the quantities of each component present. The resulting data provide a measure of efficacy of each surfactant, allowing for recommendations regarding product use for cleaning oiled birds.

References:

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