

PREPARATION OF PEARL ESSENCE

INTRODUCTION

- Pearl essence is a suspension of crystalline guanine in water or organic solvent.
- Guanine is an iridescent material found in the epidermal layers of most pelagic fishes like mackerel, sardine, herring etc.
- Gives silver colour shining when combines with collagen and calcium phosphate.
- Guanine produces similar optical effect to that of real pearl when deposited inside surface of solid beads.

Method of preparation of pearl essence from fish scales :

- Guanine deposit on the fish scales is more removable as compared to that on epidermis.
- Freshly removed scales are collected and washed to removed adhering foreign matter.
- Scales can be preserved in 10-15% brine.
- The brine is later drained off and the scales are squeezed in muslin cloth bags and compressed.
- The compressed mass can be stored at 0 °C.
- Pearl essence can be prepared as an aqueous or non-aqueous suspension.

Aqueous suspension:

- Washed scales are agitated with minimum quantity of water containing little ammonia in an agitator.
- The mixture is then passed through a strainer to remove the scales.
- The pearly substance present as a suspension in the liquor is purified by settling in a cool atmosphere.

- Guanine settles and the supernatant is decanted and replaced with fresh ammoniacal water.
- The process is repeated several times until the guanine crystals are fairly well purified .
- 0.3% salicylic acid is used as preservative .

Non-aqueous suspension:

- Made by suspending guanine in organic solvents like acetone, amyl acetate, chloroform and carbon tetrachloride, or in acetic acid.
- Also presented in the form of a thick paste of crystals , suspended in a viscous liquor of cellulose in amyl acetate.

Yield of pearl essence according to species of fishes:

Fish species	Body weight	Weight of scales(g)	Weight of pearl essence from the scales (g)
Ribbon fish	Per 100g	1.4	0.288
Sardine	Per 100g	1.9	0.100

Uses:

- Most important used in the preparation of artificial pearl.
- Used as spray or dip for several items to impart an iridescent sheen reminiscent of pearls.
- Used on diverse articles as shoe, pencil, fishing rod, spectacle frame, walking stick etc.
- Also used as finishes for textiles.

Conclusion:

- The nacreous pearl essence pigment have become very popular in the creation of lustre effects in coating.
- Help in the generation of new and unique colour effects for automobile, industrial, cosmetic and pharmaceutical applications.
- The production of natural pearl essence in 2004 is estimated to be less than 50 tonnes.

THANK

YOU

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