

# OPTIMSM<sup>®</sup> IN, COSMETIC PRESERVATIVES OUT.

Add value and cosmetic benefits with self-preserving OptiMSM<sup>®</sup> – the world's most trusted MSM for personal care products.

OptiMSM<sup>®</sup>

OptiMSM<sup>®</sup> can be formulated in moisturizers, nail polish, acne creams and gels, anti-aging products, body washes, shampoos, toothpaste and mouthwashes.

## SELF-PRESERVING/PRESERVATIVE-FREE APPLICATIONS

- Cosmetics containing 10% w/w or more of OptiMSM<sup>®</sup> may need no additional preservatives, a cost-effective means to eliminate or significantly reduce preservative loading.

## COSMETIC/PERSONAL CARE APPLICATIONS

- Evidence suggests OptiMSM<sup>®</sup> reduces scarring, softens skin, strengthens nails and thickens hair
- Supports the production of collagen and keratin
- Primary building block for healthy hair, skin and nails
- pH and thermally stable
- Synergistic with other ingredients

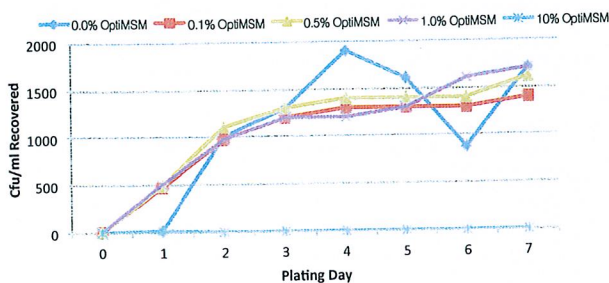
## ABOUT MSM

MSM (Methylsulfonylmethane, Dimethyl Sulfone) is a naturally occurring organic sulfur compound containing methyl groups. The chemical formula is  $(\text{CH}_3)_2\text{SO}_2$ .

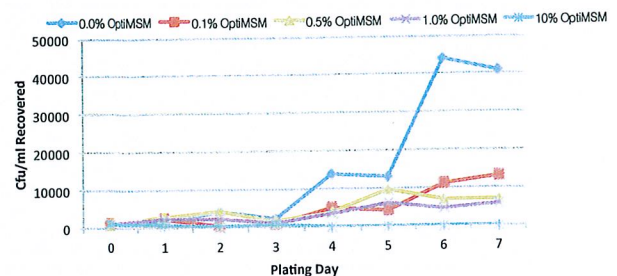
MSM is 34% sulfur by weight, and sulfur has long been a valued ingredient in dermatology. Sulfur may contribute to cross linking of proteoglycans, a key component of connective tissue. MSM is approved and listed in the International Cosmetic Ingredient Dictionary.

- Bergstrom 2008-2010 - Antibacterial Studies on numerous matrices
- Sample results from Study 1 conducted in TSB (tryptic soy broth)
- Study 2 confirmed results of Study 1 using a Second Independent Laboratory

## CANDIDA GROWTH CURVE

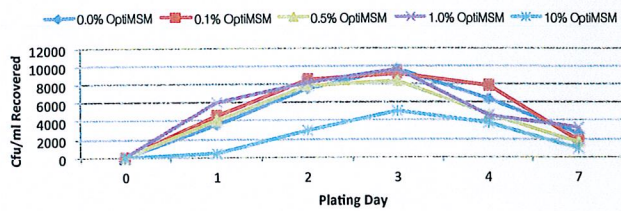


## ASPERGILLUS GROWTH CURVE

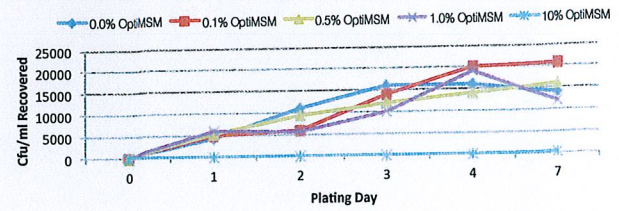




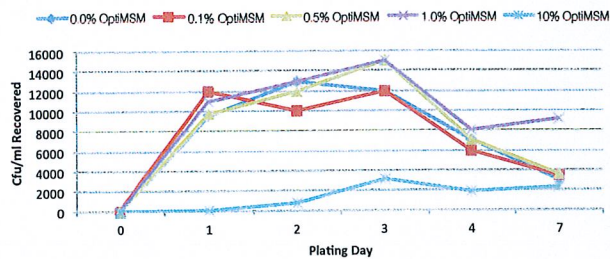
## STAPHYLOCOCCUS GROWTH CURVE



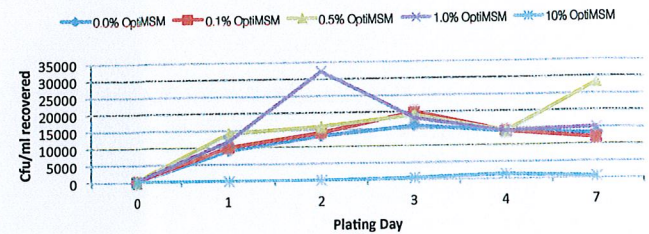
## PSUEDOMONAS GROWTH CURVE



## SALMONELLA GROWTH CURVE

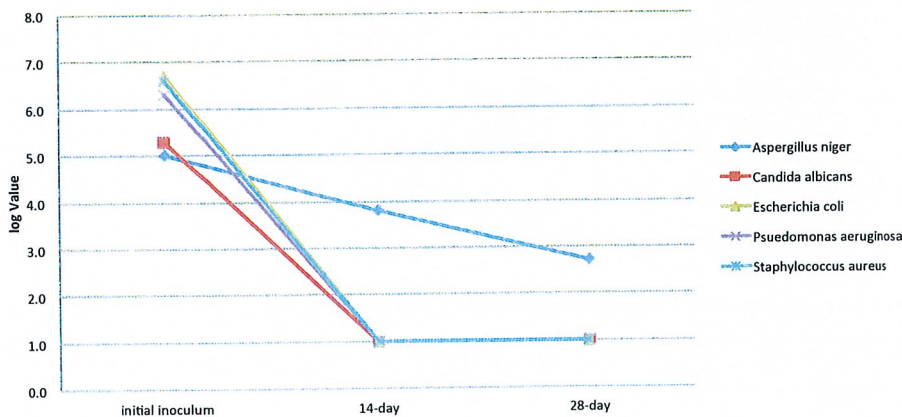


## E. COLI GROWTH CURVE



- A third study was conducted in a cosmetic matrix (Jojoba cream)  
Results met AET requirements for the following compendial references:
  - United States Pharmacopeia Category 2
  - British Pharmacopeia Category 3
  - Japanese Pharmacopeia Category 1B
  - European Pharmacopeia Criteria 2

## ORGANISM REDUCTION IN LOG VALUE



INCI NAME:  
DIMETHYL SULFONE

- A fourth study conducted on two different cosmetic matrices with no other preservatives
  - OptiMSM® at 10% concentration met criteria for above referenced compendiums
- The last study determined bactericidal effects on E-coli at 48 hours using various concentrations
  - 6-16% met AET requirements for USP, EP and JP
  - Total kill achieved at 48 hours for concentrations 12-16% verified by enrichment

OptiMSM® is manufactured in Bergstrom Nutrition's dedicated U.S. GMP-compliant, ISO 9001:2008 registered, FSSC22000 certified facility and is GRAS-designated.

1000 West 8th Street, Vancouver, WA 98660 USA | Phone: 360-693-1883 | info@bergstromnutrition.com  
720-01-207 0.0 ©2012 Bergstrom Nutrition, Inc.

**Bergstrom**  
Nutrition®