



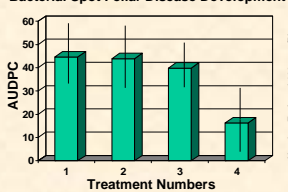
AGRICULTURE

Pepper spot disease is caused by *X. euvesicatoria*. The leading market biocide for treating this disease is Kocide. Agilyte™, when used in combination with Kocide, provided a >35% reduction in leaf-spot disease and a concomitant increase in fruit per plant of >40%.

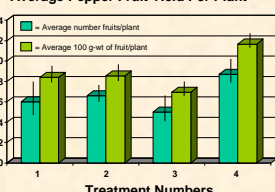


Untreated Treated

Bacterial Spot Foliar Disease Development



Average Pepper Fruit Yield Per Plant



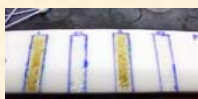
1 – Non-treated check, 2 – Kocide 3000 1.5 g/L (1.25 lb/100 gal)
3 – Agilyte™ 35 mg/L (100 uM), 4 – Kocide 3000 1.5 g/L + Agilyte™ 35 mg/L

Peach Rot caused by *Monilinia fructicola* was treated with Agile's compounds. Label 1 refers to the untreated control, and Labels 2 through 6 refer to various administrations of Agile's compounds. Agile's compounds reduce the disease in all cases, and in many cases, the disease is completely eliminated.



BIOFOULING

Agilyte™ was mixed with marine-based paint and applied to PVC plastic boards. The boards were placed in a salt water estuary in South Carolina containing various estuarine species including *Spartina alterniflora*, grass shrimp (*Palaemonetes pugio*), sheepshead minnows (*Cyprinodon variegatus*) and hard clams (*Mercenaria mercenaria*). After 3 weeks, a control surface containing only paint contained 125% more biomass than the surface incorporating Agilyte™.



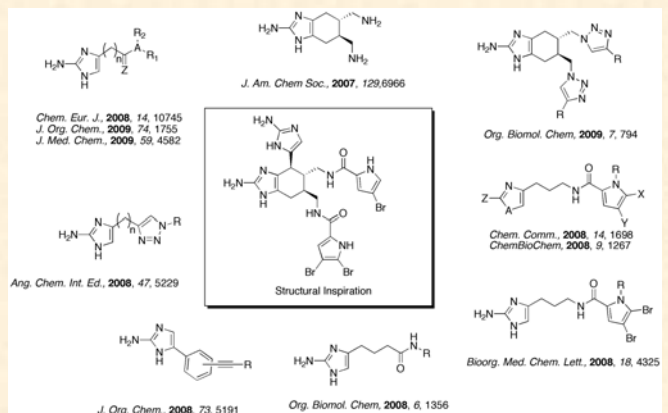
Pre-test plate:
White panels = marine paint (no anti-foulant added).
Brown panels = marine paint with Agilyte™.



3 weeks in estuary:
Green = fouling
Brown = fouling-resistant (Agilyte™ containing paint)

Core Science

Agile Sciences is developing a novel class of non-toxic, synthetically accessible derivatives of the marine natural products bromoageliferin and oroidin that have demonstrated activity against both medically relevant bacteria and agricultural pathogens. These compounds have the ability to inhibit and disperse both Gram-positive and Gram-negative bacterial biofilms as well as fungal biofilms and mixed species biofilms. Initial toxicity screening studies (simple cell lines, human epidermal cells, red blood cell lysis, and *C. elegans*) indicate that Agile's molecules have a large safety window (> 1000x established IC₅₀ value).

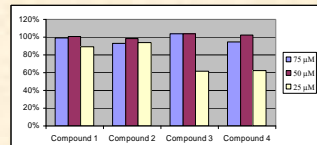


Agile's molecules (Agilyte™) inhibit and disperse biofilms of various bacteria, including:

- P. aeruginosa*: indwelling medical devices; mortality for cancer and cystic fibrosis patients.
- A. baumannii*: infections in military and indwelling medical devices
- V. cholerae*: cholera
- V. vulnificus*: septicemia and seafood poisoning
- V. anguillarum*: septicemia in marine animals especially salmonid fish
- H. influenzae*: ear infections
- B. bronchiseptica*: infectious bronchitis
- S. aureus*: e.g. MRSA
- S. epidermidis*: skin infections
- E. coli*: diarrhea
- H. pacifica*: biofouling of ships
- X. campestris/euvesicatoria*: leaf-spot disease in multiple crops

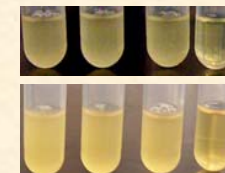
WATER TREATMENT

Water samples collected from water treatment plants in Florida and New Hampshire readily formed biofilms when incubated in 96-well plates overnight. Addition of Agile's compounds dispersed these biofilms as measured with a crystal violet assay.



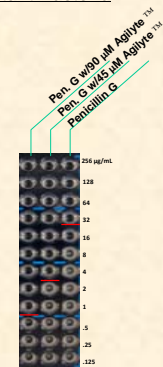
MEDICINE

Re-sensitization of Antibiotic-Resistant Bacteria



Top: Tetracycline Resistant *E. coli*. From left to right: *E. coli* control, *E. coli* with 50 μM tetracycline, *E. coli* with 150 μM Agilyte™, *E. coli* with 50 μM tetracycline and 150 μM Agilyte™.

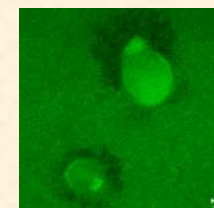
Bottom: MRSA strain BAA-44. From left to right: MRSA control, MRSA with 25 μM methicillin, MRSA with 45 μM Agilyte™, MRSA with 25 μM methicillin and 45 μM Agilyte™.



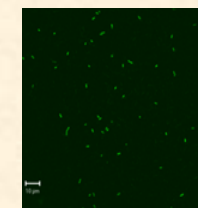
MIC studies indicate an enhancement of antibiotic activity toward antibiotic resistant MRSA.

Flow Conditions

Agilyte™ inhibits *P. aeruginosa* (leading cause of sickness and death in CF patients) biofilms (green) under flow conditions.

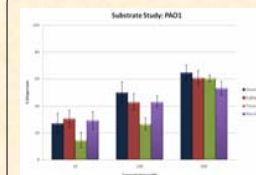


Untreated

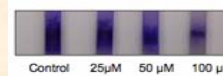


Treated with Agilyte™

MEDICAL SURFACES



Quantification of *P. aeruginosa* biofilms on various surfaces.



Crystal violet staining reveals reduction of biofilm formation for catheters soaked in media containing Agilyte™.