

SIDEROPHORE PRODUCTION OF *ALCALIGENES XYLOSOXIDANS DENITRIFICANS* AND POTENTIAL BIOLOGICAL CONTROL AGAINST *XYLELLA FASTIDIOSA*

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Reporting Period: The results reported here are from work conducted June 2005 to October 2005.

ABSTRACT

Our overall objective is to determine siderophores produced from *Alcaligenes xylosoxidans denitrificans* (*Axd*), isolated from glassy-winged sharpshooter (GWSS), *Homalodisca coagulata* Say (Hemiptera: Cicadellidae) (Bextine et al. 2004), and to investigate the ability of *Xylella fastidiosa* (*Xf*) to obtain iron from siderophores produced by *Axd*. We are also interested in the effect of siderophores as a potential biological control against *Xf*.

INTRODUCTION

Most bacteria must acquire iron by competing with environmental chelation. One mechanism for bacterial iron acquisition utilizes siderophores (Kline et al. 2000). Siderophores are small molecules that bind extracellular iron with high affinity (Neilands 1995). The presence of coding genes for iron uptake membrane receptors in *Xf* (Simpson et al. 2000) suggest that *Xf* biosynthesize and uptake siderophores (Silva-Stenico et al. 2005).

OBJECTIVES

1. Determine if *Axd* produces siderophores that *Xf* can binds.
2. Investigate the interaction between *Axd* and *Xf* in iron-restricted environment.

RESULTS AND CONCLUSIONS

By using CAS-agar assay (Schwyn and Neilands 1987), the difference strains of *Axd* have been tested for siderophores production. This is due to the difficulty of promoting production of siderophores suggesting that siderophores are crucial for biosynthesis. We are investigating a potential biological control of siderophores against *Xf*.

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FUNDING AGENCIES

Funding for this project was provided by the USDA Animal and Plant Health Inspection Service, and the CDFA Pierce's Disease and Glassy-winged Sharpshooter Board.

Additional Notes: All of the field tests were conducted under a permit from the Environmental Protection Agency (TERA R-03-01). A report of the tests was submitted to EPA and the sponsors.