









in Syracuse, NY

**Food Feed**

Research is being conducted to develop a new generation of feed crops that are high yielding and nutritious. The goal is to develop a feed crop that is high yielding and nutritious. The goal is to develop a feed crop that is high yielding and nutritious.



**Ag-Plant Photo**

Ag-Plant Photo



**Designing Sustainable, Automated Small-Scale Insectary Facilities Based on Short Rotation Crops for Local Protein Alternatives**

**Project Overview:** This project aims to develop a sustainable, automated small-scale insectary facility based on short rotation crops for local protein alternatives. The facility will be designed to be efficient and cost-effective, and will be able to produce high-quality protein alternatives for use in a variety of applications.

**Project Objectives:**

- Develop a sustainable, automated small-scale insectary facility based on short rotation crops for local protein alternatives.
- Design a facility that is efficient and cost-effective.
- Produce high-quality protein alternatives for use in a variety of applications.

**Project Team:**

- Dr. [Name]
- Dr. [Name]
- Dr. [Name]

**Project Funding:**

- NSF Grant [Number]
- NSF Grant [Number]

**Project Website:**

[Website URL]



**Characterization of Expression and Function of the Glut Cell Associated 2 (GCAD) Gene from Arabidopsis Thaliana**

**Project Overview:** This project aims to characterize the expression and function of the Glut Cell Associated 2 (GCAD) gene from Arabidopsis thaliana. The gene is known to be involved in the regulation of glutamate transport, and its function is being investigated in detail.

**Project Objectives:**



- Characterize the expression and function of the GCAD gene from Arabidopsis thaliana.
- Investigate the role of the GCAD gene in the regulation of glutamate transport.

**Project Team:**

- Dr. [Name]
- Dr. [Name]

**Project Funding:**

- NSF Grant [Number]





AMERICAN ELM WITH AN ANTIMICROBIAL COMPOUND  
FOR RESISTANCE TO DUTCH ELM DISEASE





### Bioenergy & energy profiles

**Research finding**

... ..



**Energy & sustainability**

... ..



**AgriFood - Community based vegetable substrate MC Bioenergy System**

**Water**

... ..



**Resource recovery**

... ..



**Logistics and management**

... ..









A photograph of two people, a woman on the left and a man on the right, standing in a room. The woman is wearing a purple long-sleeved shirt and dark pants, holding a dark bottle. The man is wearing a blue t-shirt and jeans, also holding a dark bottle. In the background, there is a large, oval-shaped wooden sign mounted on the wall. The sign features a silhouette of a moose and a pine tree to the left of the text "Adirondack Ecological Center". To the right of the man, there is a wooden cabinet with two drawers. On top of the cabinet, there are several items, including a taxidermy specimen of a bird of prey perched on a wooden base. A wooden chair is visible on the far left. A track light is mounted on the ceiling in the upper left corner.

*Adirondack  
Ecological  
Center*









# Effect of *Trichostema hartmannii* strain T-22 on Biomass Production of Shrub Willow (*Salix* spp)



Abstract: The objective of this study was to evaluate the effect of *Trichostema hartmannii* strain T-22 on the biomass production of shrub willow (*Salix* spp) under field conditions. The study was conducted in a field plot in the Pacific Northwest region of the United States. The results showed that the application of strain T-22 significantly increased the biomass production of shrub willow compared to the control. The increase in biomass production was observed in both the first and second years of the study. The results suggest that the application of strain T-22 is a promising strategy for increasing the biomass production of shrub willow for bioenergy production.

Introduction: Shrub willow (*Salix* spp) is a promising feedstock for bioenergy production. However, the biomass production of shrub willow is often limited by nutrient availability and pest/disease pressure. The application of beneficial microorganisms, such as *Trichostema hartmannii*, may improve the biomass production of shrub willow by enhancing nutrient uptake and providing natural pest/disease control.

Methods: The study was conducted in a field plot in the Pacific Northwest region of the United States. The plot was divided into two sections: a control section and a section receiving strain T-22. The biomass production of shrub willow was measured in both the first and second years of the study. The results were analyzed using statistical methods.

Results: The results showed that the application of strain T-22 significantly increased the biomass production of shrub willow compared to the control. The increase in biomass production was observed in both the first and second years of the study. The results suggest that the application of strain T-22 is a promising strategy for increasing the biomass production of shrub willow for bioenergy production.

Conclusions: The application of strain T-22 significantly increased the biomass production of shrub willow compared to the control. The increase in biomass production was observed in both the first and second years of the study. The results suggest that the application of strain T-22 is a promising strategy for increasing the biomass production of shrub willow for bioenergy production.

































