| llow different | | | | of Die Dimester |
|----------------|----------------|------------|--------------|------------------|
| How different | Types of foods | affect the | productivity | of Bio-Digester. |

Brennen Michel

Greenwich Central School District Greenwich, NY USA

This study is related to bacteria, food waste, fuel production and composting. This study is important because it will help us use a type of energy production that isn't commonly used that can help us create cleaner energy and it will help us reduce food waste in the future. Previous studies have shown how useful bio-digesters has been to third world countries and creating clean and useful gas that can be used to power generators, stoves and stove tops. The objective of this study is to find out how different food groups function in a Bio-Digester. My Research was done by creating 5 bio-digester by using 5 gallons of

My Research was done by creating 5 bio-digester by using 5 gallons of buckets.

The data I collected shows that no gas was produced by the bio-digesters. This could suggest that the different food groups might not work to good in a bio-digester apart. This is because all the digester showed under two pounds of pressure which means the there was a very little reaction between the food and the bacteria in the cow manure. **Category** Pick one only— Mark an "X" in box at right

| Animal Sciences | |
|-------------------------------|---|
| Behavioral & Social Sciences | |
| Biochemistry | Ц |
| Biomedical & Health Sciences | H |
| Biomedical Engineering | H |
| Cellular & Molecular Biology | Ц |
| Chemistry | Ц |
| Computational Biology and | Ц |
| Bioinformatics | _ |
| Earth & Environmental | Ц |
| Sciences | _ |
| Embedded Systems | Ц |
| Energy: Sustainable | Ц |
| Materials and Design | _ |
| Engineering lechnology: | Ц |
| Statics and Dynamics | _ |
| Environmental Engineering | Ë |
| Materials Science | Ц |
| Mathematics | Ц |
| Microbiology | Ë |
| Physics and Astronomy | 님 |
| Plant Sciences | Ц |
| Robotics & Intelligent | Ц |
| Machines | _ |
| Systems Software | |
| Translational Medical Science | |

FOR ISEF OFFICIAL USE

ONLY

- 1. As a part of this research project, the student directly handled, manipulated, or interacted with (check all that apply):
 - □ human participants □ potentially hazardous biological agents
 - □ vertebrate animals □ microorganisms □ rDNA □ tissue
- 2. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only.
 - 🗹 yes 🗌 no
- 3. I/We worked or used equipment in a regulated research institution or industrial setting.

| ~ | yes | | no |
|---|-----|--|----|
|---|-----|--|----|

4. This project is a continuation of previous research.

| ~ | no |
|---|----|
| | ~ |

5. My display board includes non-published photographs/visual depictions of humans (other than myself)

🗆 yes 🗹 no

6. I/We hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work.

🗹 yes 🗌 no