



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) Carina I. Salcedo	Project Number J0221
Project Title Feeding My Flock	
Abstract Objectives/Goals Goals: This project's goal is to modify a mass manufactured (barrel-style) poultry feeder in order to raise the level of food in the feeder's trough area to three centimeters deep and use less food, reducing stale and wasted feed. Methods/Materials Methods/Materials: The hypothesis specified testing two variables separately and combined. The first variable was the angle at which the food is delivered to the trough. The minimum desired angle was determined by observing tests of 50 grams of chicken feed placed on a flat piece of aluminum and positioned at different angles. The second variable tested was height of the gap through which the feed flows to the tray. The ideal gap was found by measuring the depth of pellets while a vertical piece of cardboard was used to simulate the barrel at different heights. Each modification was then constructed and tested in the actual feeder. Results Results: Slope tests demonstrated that a 20° angle consistently aids in the flow of the feed. Gap tests showed a four-centimeter gap would dispense the desired three-centimeter depth of pellets to the tray. Conclusions/Discussion Conclusions: A cone with a 20° angle not only helps consistently deliver food to the tray but also replaces feed which would otherwise go stale. Tests showed the gap variable was the key factor to achieving the desired height of food in the trough. While each of the two variables can improve the feeder, the combination of the two is the most beneficial.	
Summary Statement This experiment determines design modifications reducing the amount of food wasted in a mass manufactured, barrel poultry feeder.	
Help Received My parents helped me edit; Mrs. Johnston taught me trigonometry; my grandfather advised me on the design of equipment.	