



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

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**Project Title**  
**Incubation of Eggs: Homemade vs. Commercial**

**Abstract**

**Objectives/Goals**  
 This experiment is a long term project with several objectives/goals. The first objective was to determine if a homemade incubating device could be as effective for incubating and hatching eggs as that of a more expensive commercial incubator. Our second objective was to use a nutritional yeast supplement to determine if a healthier, better laying chicken could be grown.

**Methods/Materials**  
 Commercial incubator: -egg cartons to hold the eggs in an upright position; -3" by 5" sponge was placed in the bottom of the incubator to ensure a humidity level of 65%; -heating coil to establish and maintain a constant temperature of 99 degrees Farenheit; -23 fertile eggs; -metal wiring along the bottom of the incubator to ensure stability; -thermometer and barometer

Homemade incubator: -Stryfoam Ice Chest used to maintain heat; -cooking rack to support fertile eggs; -egg cartons to hold eggs in an upright position; -heating pad to ensure and maintain temperature of 99 degrees Farenheit; -thermometer and barometer; -3" by 5" sponge for humidity; -30 fertilized eggs; fertile eggs; - donation of 6 dozen eggs from Hy-line Farms.

**Results**  
 incubator type infertile eggs aborted eggs hatchable eggs re-incubated embryos late blooming eggs  
 homemade (30 eggs) 37% 10% 23% 20% 30%  
 commercial (23 eggs) 35% 4% 25% 92% 8%  
 new egg(2 dozen) 0% 8% 100% 92% 0%

These percent values were based on candle-lighting the eggs on day thirteen. On day fifteen, eggs were accidentally unplugged for twenty-four hours. Using our already established set-up, 92% of the chick embryos hatched, while none of the eggs that were unplugged managed to survive.

**Conclusions/Discussion**  
 From this expermint we have concluded taht based on the candle-light method, commercial incubators have a higher hatching rate than homemade incubators. The reason for this is that it is very difficult to maintain a set tempeature when using a heating pad, while commercial incubators are designed to maintain a set tmeperature. In addition to this, we have also noticed that chicks eating the supplemental feed tend to grow and feather at a faster rate. The reason being, the yeast supplement seems to be easier to digest than tradional chicken starter mesh.

**Summary Statement**  
 To determine whether homemade incubators are as effective as commercial incubators.

**Help Received**  
 Hyline Farms for the donation of 6 dozen chicken eggs