



**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