



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Christopher S. Avery	Project Number J0201
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Project Title
A Quality Control Study of Little League Baseballs

Abstract

Objectives/Goals
The two largest manufacturers of baseballs certified for use in Little League Baseball competition are the Rawlings Sporting Goods Company and Diamond Sports Company, Inc. Since Rawlings is the sole supplier to Major League Baseball, and the MLB balls had quality control issues noted in recent reports, it was proposed to see if they also existed at the Little League level, and to compare the consistency of the Rawlings and Diamond balls, with the hypothesis of: Little League baseballs made by Rawlings are not as consistent in their performance, size and weight as those made by Diamond.

Methods/Materials
Materials: 1 dozen each of Rawlings and Diamond brand Little League Competition Grade Baseballs.

Testing performed included:
1) Measurements, using a digital scale and a flexible measuring tape, of uniformity in weight and circumference against the specifications of 5.0 to 5.25 oz. and 9.0 to 9.25 inches, respectively. (English units of measure were used, as that is what is used in the baseball specifications).
2) Bounce tests for liveliness, where a dozen samples of each brand of ball were dropped from a height of 72inches, recording the maximum rebound height of the balls on the 1st bounce, giving a rebound percentage comparable to that done in the Major League ball testing. Two rounds of bounce tests were performed and recorded with both digital video and still cameras.
3) Visual inspections of both the exterior of all the samples and a cross section of a randomly chosen ball from each brand to check how each is constructed.

Results
Findings showed that while the Rawlings balls did have some quality control issues in the areas of weight and size, their performance was consistent within the brand. The Rawlings balls' rebound percentage was less than the Diamond balls', but it was noted that different, softer materials were used in the Rawlings ball construction when compared to the Diamond ball construction.

Conclusions/Discussion
Rawlings' quality control IS lacking somewhat as evidenced by the larger size and weight differences when compared to the Diamond balls.
>>>But it is the difference in ball construction between the Diamond and Rawlings Competition-Grade balls that most likely explains the difference in the performance test results, NOT quality control. Thus, the results both partially prove and disprove the hypothesis.

Summary Statement
An examination of how quality control and material construction affects the performance of Little League baseballs.

Help Received
Thanks to my neighbor, Mr. Mark Mooney, who lent the power saw used to get cross-section cuts of the sample baseballs; and my father, David Avery, for helping me to type the report, showing how to use a spreadsheet for data analysis, and for buying and/or helping to find the resources used for the project.