



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Jotthe Kannappan</b>	<b>Project Number</b> <b>J1714</b>
<b>Project Title</b> <b>Paper Chromatography: Testing Leaf Pigments</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> HOW TO IDENTIFY THE PIGMENT OF A LEAF USING PAPER CHROMATOGRAPHY?</p> <p><b>Methods/Materials</b> <b>MATERIALS:</b> ACETONE, A RULER, PENCILS, A SMALL WIDE-MOUTH JAR, SPINACH LEAVES, ICEBERG LETTUCE LEAVES, GREEN CHARD LEAVES, SEVERAL SMALL PIPETTES, FILTER OR CONSTRUCTION PAPER <b>PROCEDURE:</b> GRIND UP ROUGHLY EQUAL SAMPLES OF EACH OF THE DIFFERENT PLANT LEAVES AND DISTRIBUTE THEM INTO LABELED TEST PLASTIC CUPS. ADD ENOUGH ACETONE TO SUSPEND THE GROUND UP LEAVES. LET THE ACETONE/LEAF MIXTURE SIT FOR 24 HOURS. TAKE AN ALREADY CUT PAPER STRIP AND USE THE RULER TO DRAW A HORIZONTAL LINE 2CM ABOVE THE EDGE OF THE PAPER (THIS IS THE ORIGIN LINE). LABEL WHAT SAMPLE IS BEING TESTED IN PENCIL. FILL THE JAR TO A DEPTH OF 1 CM WITH ACETONE. TAKE ONE OF THE SMALL PIPETTES AND FILL WITH ONE OF THE SAMPLES. SPOT THE SAMPLE IN THE MIDDLE OF THE ORIGIN LINE AFTER PRACTICING A FEW TIMES TO GET A NICE ROUND SPOT. PLACE THE STRIP OF PAPER INTO THE SOLVENT CHAMBER. PLACE A PENCIL ACROSS THE TOP OF THE GLASS AND TAPE THE PAPER TO IT TOKEEP IT IN PLACE. TAKE OUT THE PAPER STRIP AFTER TEN MINUTES. MARK HOW FAR THE SOLVENT SOAKED UP THE STRIP WITH A PENCIL. TRACE AROUND THE NEWLY MOVED SPOTS SO THAT IF THEY FADE, YOU CAN STILL USE THEM TO COLLECT DATA. CALCULATE THE RETENTION FACTOR VALUE FOR EACH SPOT. REPEAT THIS EXPERIMENT FOR EACH TYPE OF PLANT LEAF. USE SAME SIZE PAPER STRIPS AND ALLOW TEN MINUTES TO SOAK FOR ALL TRIALS.</p> <p><b>Results</b> <b>RESULTS:</b> THE RESULTS OF MY EXPERIMENT ARE: SPINACH LEAVES AVERAGE RETENTION FACTOR: 0.50 GREEN CHARD AVERAGE RETENTION FACTOR: 0.424</p>	
<b>Summary Statement</b> My project is about the testing of leaf pigments using the analytical procedure of paper chromatography.	
<b>Help Received</b> My father and grandfather helped me assemble my board. My father was my supervisor for the handling of acetone during the experimentation.	