



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

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| Name(s) Katarina M. Guzman | Project Number J1208 |
| Project Title Corn to the Rescue | |
| <p style="text-align: center;">Abstract</p> <p>Objectives/Goals To see if Polylactic acid (PLA) biodegradable cups, knives, spoons and forks can be composted in a home compost pile. If this is possible America could reduce both it's oil dependance and landfill waste.</p> <p>Methods/Materials I used equal sized Polylactic acid biodegradable "plastic" dinnerware and petroleum based "plastic" dinnerware to compare the biodegration rate over a 90 day interval. The compost used was ground ficus tree, which was added every 10 days to a 90 gallon rotating composter. The daily outside temperature was documented along with the temperature of the compost pile by inserting a large thermometer. A camera helped document the stages of biodegration and a scale was used to weigh the cups on day 1 and on day 90.</p> <p>Results I was very pleased with my results. Although my Polylactic acid PLA cups did not fully biodegrade, they did show significant signs of biodegration and lost 12.8% of their weight on average, while the petroleum based plastic cups showed no signs of biodegration.</p> <p>Conclusions/Discussion I now know that PLA cups will biodegrade in a home compost pile within a reasonable time. In comparison, petroleum based cups take 700 years to start biodegration. I believe PLA products are the future, because they are just as durable as plastic, reduces our dependency on oil and can return to the earth naturally.</p> | |
| Summary Statement Biodegradable PLA cups can save our landfills one cup at a time. | |
| Help Received Mom: typing Dad: chopping ficus tree Science lab: weighing of cups | |