



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2019 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Cameron Steagall</b>   | <b>Project Number</b><br><b>J1130</b> |
| <b>Project Title</b><br><b>Do Walnut or Almond Hulls Affect Water Retention Rates in Soil?</b>  |                                       |
| <b>Abstract</b><br><b>Objectives</b><br>The objective of this project is to study if different nut hulls (almond and walnut) affect water retention in soil.<br><b>Methods</b><br>Added ground up almond hulls and walnut hulls to loam soil in individual test pots. Added equal amounts of water to each of the soil mixtures.<br>Measured water retention using a moisture meter for 10 consecutive days.<br><b>Results</b><br>The addition of ground up almond and walnut hulls to loam soil had small positive effects on moisture retention in soil. Almond hulls had a greater effect than walnut hulls on moisture retention (by 7%).<br><b>Conclusions</b><br>My repeated tests revealed that water retention can be increased by adding ground up nut hulls to soil. The results can help us understand about how to conserve water and still make sure that soil retains adequate moisture to support crop production. |                                       |
| <b>Summary Statement</b><br>I showed that adding nut hulls to soil can increase water retention over time.  |                                       |
| <b>Help Received</b><br>My science teacher, Mrs. Fidalgo helped me design my experiment.  |                                       |