Vegan Leather Obtained From Cedrus deodara

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The leather industry is worth hundreds of billions of pounds a year, and it is expected to grow. Alternately vegan leathers are made from plant based materials. This project is about making leather from plants Cedrus deodara and Moringa oleifera and comparing their properties as their leaves are rich in starch and lignin, naturally existing polymers that can thicken the material extract and turn it into leather. Both the sample were prepared by mixing water and leaves extract in the ratio of 1:2, and were heated for 15 minutes and then were placed under sunlight for 48 hours. The relative tests conducted to check fire resistance, calculation of specific heat, water absorption, pH, stitch and tear, color fadedness and thickness on the two samples led to the conclusion that plants based leathers do resemble the properties of animal leather and can replace it in future. The outcomes of tests led to the conclusion that vegan leather was resistant to fire, did not absorb water quickly like animal leather, and have specific heat closer to animal leather. Optimum thicknesses obtained between 1.2mm to 1.6mm are used in making lining, light bags, light wallet and embossing. They have significant tensile strength to bear the stress as leather. The determined pH value is 7.6 which is neutral and makes it less sensitive to skin compared to animal leather which has an acidic pH. The relative tests conducted exhibit that vegan leather have similar properties like animal leather and can replace it in the future.

Awards Won:
Sigma Xi, The Scientific Research Honor Society: First Physical Science Award of $1,500