Creation of Biodegradable Polymers From Starch of Zea mays Combined With Organic Resin

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Obtaining a plastic biopolymer from Zea Mays represents a more environmentally friendly solution. One disadvantages of this biopolymer is its short useful life. For this, some substance must be added that serves as a degradation barrier and provides hardness and flexibility to it, therefore, polymer can be created from corn starch by adding organic resin to increase its useful life? As a solution to this problem, a biodegradable polymer has been developed from corn starch and organic resin, which, compared to synthetic ones, degrades in the environment when exposed to certain conditions in a shorter time. For this, the corn starch-based biopolymer was prepared, then 20 mL of organic resin was added and shaken until a homogeneous mixture is achieved. Then the hardness of each of the samples was measured and the time it takes for the biopolymer to degrade was documented. After studying the properties of hardness and flexibility of these biopolymers and having it under study for a period of 54 days, a 60% biodegradability could be verified in 87% of the samples of the experimental groups. It was also obtained that 50% of the samples exceed 10HA of hardness on the "Shore A" scale, which it means that they are in the range of soft plastics, an accepted measure for the realization of these. In conclusion it was possible to manufacture a degradable biopolymer from Zea Mays and organic resin effectively. Because this provides resistance to degradation, making it more durable and providing quality to the polymer.

Awards Won: