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The Dirt on Baseball: Engineering A Path Toward Standardizing The Baseball Mudding Process

According to Major League Baseball rule 3.01(c), baseballs must be rubbed with mud before each game to remove the gloss. This procedure, performed by hand, produces inconsistent color, providing an unfair competitive advantage for one team or another. An industrial grade prototype was made to consistently mud a baseball; its design was built upon 2007 research indicating maximum consistency to be reached when a ball is mudded, while rotating on 3 axes of spin. This prototype was built using several motors, sensors, and a laser all being run by a circuit board which also controls new mechanisms such as automatic mud application, and automatic baseball ejection. As part of 2008 research, a spectrometer was used to analyze baseball color directly. A device was engineered using a spectrometer, broken microscope parts, and other household materials, to examine the transmission levels of waves in the visual spectrum reflected off a curved surface. Over 80 thousand readings scientifically quantified baseball color, showing machine-rubbed baseball's standard deviation of color to be 4.8858nm. Whereas the standard deviation of color in hand rubbed baseballs were almost 55% greater at 7.5189nm. Machine-mudded baseballs have been used in several professional baseball games, and have been declared consistent by many high ranking officials and players in the baseball world. Currently, the Baseball Deglosser has a US Patent Pending.