A Novel Suture Additive: Use of Beet Extract to Assess for Surgical Wound Infection

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The A Novel Suture Additive: Use of Beet Extract to Assess for Surgical Wound Infection experiment, has developed a suture that can change color when it comes into contact with an infected wound. A wound that is infected has a basic pH which is different than an uninfected wound. The goal of this experiment was to develop a suture that could indicate if a wound is infected. In developing countries, people might not have the ability to see a doctor but if they knew that a color change in a suture could indicate infection, they would know to seek medical attention. This was accomplished by discovering a natural indicator (beet juice) that is also antibacterial. Through many trials, it became evident that 50%-50% Polyester-Cotton string fit the criteria of my ideal suture. From experimentation, a suture with high absorbency and a noticeable color change at a pH of 6 to 8 was deemed as an optimal suture. Since the initial findings, the string was tested on K12 E Coli treated Petri dishes and early experimentation suggests that the beet juice suture is indeed antibacterial. Meaning, the K12 E Coli did not grow where the beet juice was added to the petri dish. This is an inexpensive, effective suture that is able to detect infections.

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