Comparing the Efficacy of Dietary Fibers vs a Sap from Acacia Tree: Gum Arabic

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Over 1.2 billion people suffer from constipation each year and in the US alone $725 million are spent on laxatives per year. The most commonly used treatments are stool softeners, osmotic, and stimulant laxatives which are known to have side effects and are also costly. However, there are natural ways for treating constipation such as using dietary fibers like Psyllium Husk and Guar Gum which have been known to be very effective with few side effects, suggesting that natural dietary fibers are a better option. Gum Arabic, a hardened sap from the Acacia tree found in Sudan, is a popular treatment for an upset stomach. In this comparison study, the laxative property of Gum Arabic was tested against Psyllium Husk and Guar Gum. The experiment was performed by soaking the fibers in corn oil for fifteen minutes. At the end, the amount of unabsorbed oil was recorded. A one-way ANOVA test was used to find the difference between the amount of oil unabsorbed for each sample tested. The results showed that Psyllium Husk had a significantly lower amount of oil remaining than both Guar Gum and Gum Arabic ($p<0.001$), suggesting a higher absorption rate. The average amount of oil remaining for Gum Arabic was less than that of Guar Gum, suggesting that Gum Arabic is effective as a natural laxative and is the second-best fiber amongst those used in the experiment.

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