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Gum arabic acacia for manufacturing of hard and soft empty capsule shell in Sudan 2011

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Introduction: Gum is a dried exudate from stems and branches of *Acacia senegal* (Linne) Willdenow and other related African species of acacia family Leguminosae. It is a safe non toxic material utilized in production of capsule shell compared to the gelatin. Capsule hardness and elasticity are influenced by changes in Gum: Water: Plasticizer ratio. This study described the use of gum arabic in the manufacturing of capsules using water and plasticizer to fine tune the elasticity.

Methods: Hand pick gum arabic grinded and treated by adding glycerin B.P, polyethylene B.P glycol, sorbitol and purified water in a ratio of 5:2:1 per volume in Wafra pharma industry. A flexible sheet was produced from the mucilage to confirm the formula reliability. Then after capsules shells were produced by process of dipping molds in the mucilage and let to dry.

Results: The influence of Gum: Water: Plasticizer ratio on capsule formulation showed the difference in ratio of gum solution formula affects the elasticity degree of the sheet. When the quantity of the plasticizer is increased, the ratio of Water: Plasticizer decreased.

Conclusions: Gum arabic is a stable suitable natural material to be used in capsule shell production in Sudan. Both gum solution and plasticizer loading level were found to influence the initial rate of elasticity; elasticity shown to be controlled by the added quantity of plasticizer.

Biography

Suad Yousif Abdalla Alkarib has completed her PhD from University of Khartoum, Sudan. She is the Founder of College of Pharmacy in Karary University. Earlier she was the Director General Manager for the "Wafrapharma Laboratories Ltd. for drug manufacturing. She is the Member of the Sudanese Medical Council, Scientific Researches committee in Gum Arabic Board, Sudan, Arab Administrative Development Organization (League of Arab States). She is the Rapporteur of the Industrial Pharmacy Committee in the Pan Arab Colleges of Pharmacy. She is the Member of the proposed fellowship in Technology of Industrial Pharmacy (Council of pharmaceutical specialties, Sudan). She has published more than 15 papers in different journals and conferences.

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