RESEARCH OF SYRUPS VISCOSITY DEPENDING ON THE CONCENTRATION OF HYDROXYMETHYLPROPYLCELLULOSE

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One of the major tasks of pharmaceutical science is the creation of new medicines. Syrups are most convenient dosage form for internal application for children and adults. Such popularity of syrups explains in addition biopharmaceutical aspects related to the regularity and absorption speed medicinal substances, their distribution and excretion, exception pain when taking drugs, metering accuracy.

Medicinal syrups is concentrated solutions of sugar, to which was added active pharmaceutical ingredients and auxiliary substances, such as fillers, sweeteners, preservatives, dyes, stabilizers, pH regulators and flavors.

Syrup bases are presented by solutions of sucrose, polyol or their mixtures. Sucrose is standard of taste purity and sweetness. All other substances, having sweet taste, called - sweeteners.

The study of structural and mechanical properties of syrup is necessary for the development and improvement of production processes, determining the optimal conditions for storage. Rheological properties affect on therapeutic and consumer indicators such as the release of medicinal substances, dosage and stability.

The aim of our work was to study the indicators of sucrose syrup viscosity depending on the concentration of hydroxymethylpropylcellulose.

Previous research physical and chemical and technological parameters of sucrose samples was found that stable high indicators samples of granular sucrose under the brand name Compri Oh, that is white granules with good flowability properties; different by composition (pure sucrose or mixed with other auxiliary substances), structure, particle size and bulk density. So, for samples research was used sucrose syrup mark Compri O, solution of which was adjusted to the desired viscosity by thickener HPMC, that dissolves in cold water and forms a transparent liquid solution. Characteristics of HPMC include good moisture retention, thickening, adsorption and surface activity, has no taste and smell, are not toxic.

The objects of study were Compri O samples with HPMC concentration of 0.5%, 1%, 1.5%, 2%, 2.5%, 2.5%, 3%.

Viscosity measurements were carried out on viscometer MYR V2R 3000, by the Brookfield method. Temperature of measurement was 20˚C. Recorded readings - viscosity and temperature.

The research results show that the viscosity of syrup with 60% content of Compri O is 40 mPas. HPMC was injected 0.5%, 1%, 1.5%, 2%, 2.5%, 2.5%, 3% Adding of 0.5% HPMC allowed to increase the viscosity of almost 20%. Next adding of HPMC within the limits of 0.5% allowed to increase viscosity in 4 times (165 mPas), without changing appearance and consumer characteristics.

The results suggest that for further research should be used HPMC in the amount of 3% of the total weight.