

SUMMARY

This research was engaged by an Estonian company Sutu OÜ whose main product sold is a reed drinking straw. In this research, product development of the reed straws was conducted from a development plan up to durability testing to add value to the straws. Tests were done to determine how the pectins can be removed from the reed straw surface coating so the natural finishing materials can fasten on the straw surface and withstand durability tests.

Investigating the competitors showed that reed straw is the cheapest natural straw that can be also reused. The closest competitor, bamboo straw, price is 50% higher compared to reed straw. At this moment there is no similar product on the market where a natural and biodegradable straw has an engraved design on it which is also coloured and this will give a huge advantage to the company on the competitive market.

During the development and testing it came obvious that the surface protective wax can't be removed with the treatments that were found when researching the literature since no toxic chemicals can be used that are not suitable for food industry, but were used in all the methods found.

Designing the collections for reed straws was an alternative to colouring full straws. With designing the collections, the patterns were build upon natural shapes and textures which evolved into three collections – abstract, geometry and special collection. Patterns were made on the straws with laser engraving machine. Extra value was added with colouring the engraved patterns with natural food colours.

Durability tests were necessary to confirm if the food colours withstand being in a drink for longer period of time. Tests showed that not all the colours fastened on the reed surface and only positive results can be used with the production.

Further research on laser engraving machine rotating conveyor device is necessary to make the production faster and less dependent on people.