

Popularised science summary

Can a plant-based milk for children be made? Well yes, that's what this study is about!

And what's the big deal with that? To start with, commercial plant-based milks don't have all the necessary nutrients and in the right quantities for children. Also, since children are more sensitive, extra care is needed for making sure they stay healthy, safe, and they don't cry because their milk sucks in taste!

And these are not all the challenges yet! Imagine making a plant-based milk with nuts or cereals; you add the ingredients in water, you blend everything together, you strain the milk, and you store it in a bottle. What happens after a couple of days? The solids that didn't get mixed well passed from the strainer, and now you see them on the bottom of the bottle! And what happens after a week or so? The milk gets spoiled, ugh!

From a nutrition point of view, plant proteins are quite challenging, because they cannot form a complete protein alone, as most animal proteins do. This means that at least two plant proteins need to be blended together for making a complete protein. For example, bread alone is not a complete protein, but bread with peanut butter is!

Since vegan, vegetarian, and flexitarian diets are constantly growing, many parents also feed their children with vegan foods. Therefore, our purpose is to make sure that kids are enjoying products that are healthy and nutritious!

Therefore, the goal of this study was to develop prototype products similar to plant-based milks, but suitable to toddlers. For achieving this, we needed to think about different things for the ingredients:

- Commercial availability, so ingredients that are easily accessible, throughout the year, and in big enough quantities.
- Consumer perception, in other words, to choose ingredients that are familiar with mums, and that are known to be nutritious.
- Suitability, meaning that the ingredients are safe, and don't cause problems to toddlers when used in specific quantities.
- Nutritional composition, as for example too much protein can lead to obesity, while too little iron can cause nutrient deficiency.
- Physical, chemical, and stability properties of the ingredients when mixed in liquids. For instance, to make sure they get dissolved well, they don't create lumps when heated, and they don't set on the bottom of the bottle after some time.
- Sensorial properties, meaning their smell, flavour, mouthfeel, and overall acceptance is good.

The ingredients we examined were different proteins, carbohydrates, lipids (oils), and flavours. So, following the above considerations and results, we selected the best ingredients. Then, through different workshops, we matched the best ingredients together, and we made five products! Last but not least, we also designed some packaging ideas to give character to the products!

Well that was it, children will soon be able to enjoy plant-based milks without any fear!