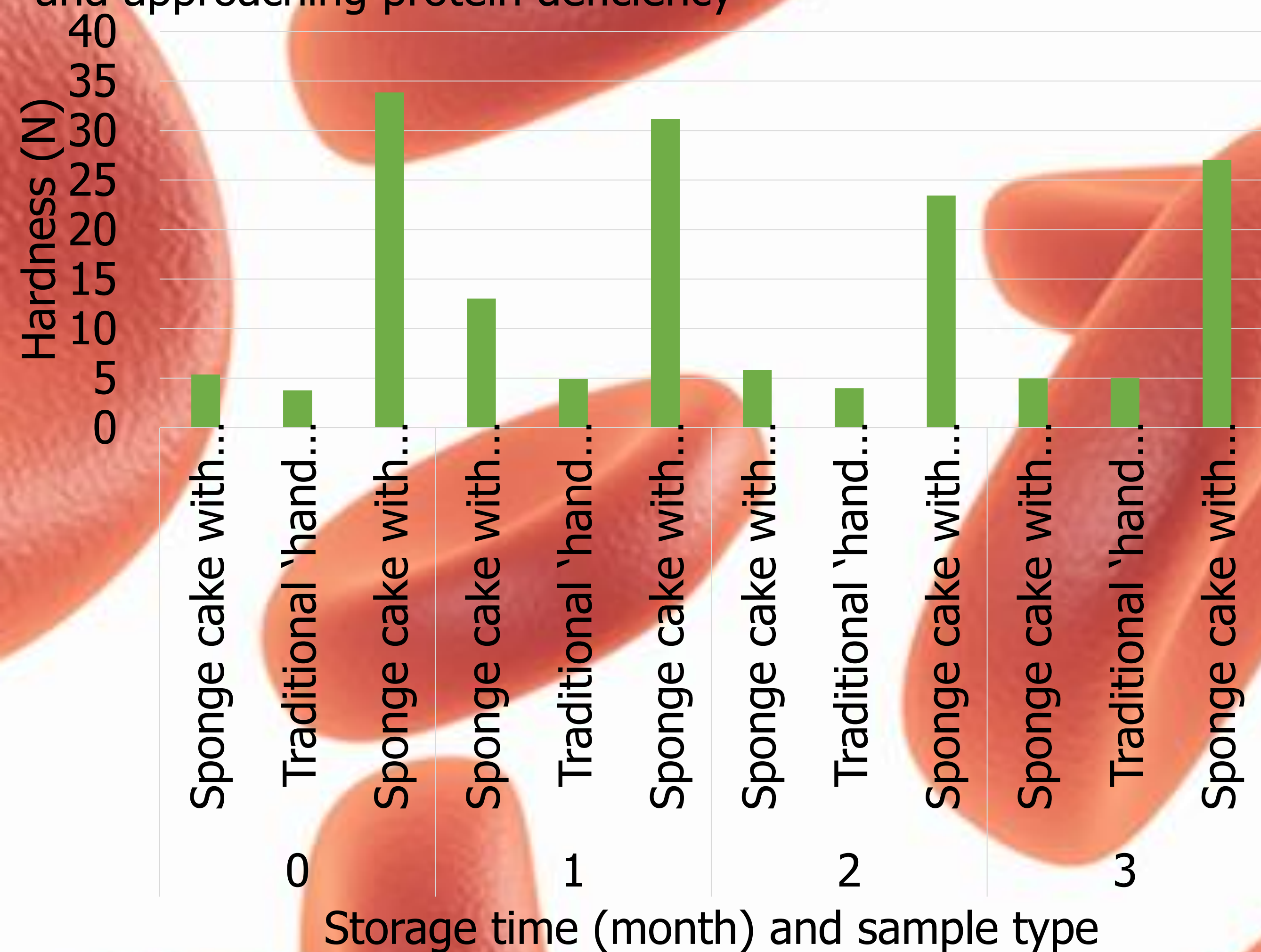


Animal blood and separated blood fractions are valuable resources, which are mostly wasted as a hazardous waste. Consumers also prefer foods from sustainable systems. Proteins, like blood plasma proteins, which were not used for human consumption so far, will have an important role in the near future because the absolute and relative overpopulation and approaching protein deficiency

Techno-functional and sensory attributes (water activity, moisture content, colour and texture related properties) were measured by instrumental methods. Texture of sponge cakes was measured by Stable Micro System (SMS) TA.XT Plus texture analyser.

Based on this research the allergenic egg powder can be substituted by non-allergenic blood plasma powder in sponge cakes, but the change in the ingredient has an effect on some properties. If instrumentally measured sensory attributes of different types of cakes were compared, cakes made with plasma powder were found harder and more firm, more suitable for instance cake sculpting or producing harder cakes, which can withstand higher load from fillings. Water activity stayed near the critical 0.86 value. Moisture content also remained on a desirable level. Product development was successful. Only high salt content of blood plasma powder can cause non-compliances beside inadequate fillings or flavouring.



Egg is an allergenic, essential food ingredient in bakery products because of its solubility, heat coagulation, foaming, and emulsification properties. Animal blood plasma not only holds opportunities for the meat industry, but it is already used in bakery products: fresh, frozen and spray-dried plasma has a similar effect in texture and appearance of cakes like egg white in similar form and amount of.

The protein content of bovine blood plasma is about 7.9%, in which the immunoglobulins represent 4.2%, albumins 3.3% and fibrinogen 0.4%. According to another research, plasma proteins contain globular proteins (about 60% albumins and 40% globulins) and around 3-4% fibrinogen. Proteins are concentrated in all dried, powdered product. The composition of proteins in case of blood plasma powder are about 50% albumin, 15% α -globulin, 15% β -globulin and 15% γ -globulin.

