

Discussion Session 4 – Changing the food system?

The audience enjoyed what they described as pragmatic and sensible presentations in this session. Professor Wood's talk on alternative protein sources of the future was particularly enjoyed for the step-by-step cost calculation for lab-grown meat that was presented as an example. Often costings are presented just as a final value now and in the future, so seeing the breakdown was instructive.

There was disagreement in the room around many aspects of this costing. Several challenged whether pharmaceutical grade fermentation would be necessary, or whether food grade would be sufficient. Other aspects of the costs were hotly debated, emphasising how new and emerging this technology is. Many in the audience expressed the view that Professor Wood's calculations presented the understanding we have today, but this would change as the food system changed, investment increased, technology developed, and demand for these products increased. It is important to examine where New Zealand might fit in a different food system of the future if new technologies do come to the fore.

The question was asked: what else would we have to believe, to believe that lab grown meat could be cheaper than conventional meat? Would the price of energy need to drop a certain amount? And how does the cost comparison change when the environmental impacts of both conventional and lab-grown meat are included in a full cost analysis? It was acknowledged that this calculation would be highly dependent on whether renewable energy was available to produce the lab-grown meat.

Some in the audience were concerned about the food safety of lab-grown meat, as a novel food item. One audience member described it as the ultimate ultra-processed food, and wondered what public perception on lab-grown meat might be, as a food that straddles the alternative protein-processed food axis. Another added that the high number of inputs necessary for lab-grown meat increases supply chain risk, and noted that we do not often consider the requirements to produce the sugar and protein necessary to feed fermenters, along with their footprints and costs. Another consideration is the waste material from fermentation, and how this might be used or disposed of.

Delegates also mentioned that the high number of inputs for lab-grown meat may raise allergenicity risk, without necessarily resulting in a healthier product. One audience member suggested the possibility of genetically modified organisms producing proteins specifically designed for high production in fermenters, rather than trying to replicate existing proteins. Another delegate suggested the integration of fermentation into existing production systems, where synergies between the two could be found.

Outside of the actual growing process, the point was made that the production of lab-grown meat by large corporations would further centralise wealth and control in the food system, with knock-on impacts for society. Furthermore, relying on future technologies to fulfil their promise is a risky strategy.

Professor Hort's presentation met with almost universal agreement: the consumer does indeed come first, and needs to be at the heart of any change to the food system. Biology, physiological need, appearance, taste, affordability, and nutrition will often trump conscious values when it comes to food-purchasing decisions. Many asked what the priority ordering of these factors will be in consumer choice, and wondered how variable this might be between individual consumers.

There was great interest in how we might influence consumer habits, as well as in the physiology of sensory science. There was discussion of product labelling to ensure consumer understanding, as well as how different consumers can be: early adopters versus risk-averse neophobes. How might the New Zealand consumer change in the future with an aging and more diverse New Zealand population?

Much of the audience discussion demonstrated the overlap between novel or alternative foods and the consumer. For example, how happy will the consumer be about eating insects? Will the current consumer interest in synthetic animal products outlast the desire for natural foods? Both of these are very 'in' at the moment, but how long until each is 'out'?

Delegates also discussed whether alternative proteins should be marketed as such, or whether they should avoid this to become their own novel categories. Furthermore, reducing meat is often a choice people make for health reasons, thus they won't want a processed lab-grown meat substitute. Similarly, lab-grown meat will not be targeted at vegan consumers, but more likely at meat reducers. How large is this market? Is there more opportunity in selling synthetic proteins as ingredients rather than going to the extra effort of formulating them into foods? Is there an opportunity with allergy sufferers and other niche markets?

The audience agreed that alternative products have to work in the kitchen: consumers will not simply substitute the products they are used to if the substitute is costly or doesn't taste the same. Repeat purchasing is key for new products. Instead of being a substitute or an alternative, delegates discussed how novel foods could complement existing ones in combined dishes. This could be a way to address nutrient deficiencies.

As an example of changing consumer behaviour, sushi was mentioned. Sushi has risen in popularity in New Zealand, a population that formerly ate more cooked fish. By having a novel format, consumers were convinced to eat raw fish – perhaps anything can be adopted in the right format.

The link was also made between Professor Wood's point regarding insects as a low-tech solution for both food and feed, and Professor Van Zanten's talk on circular agriculture and Professor Martindale's talk on food waste. The audience requested hearing more on the possibilities of aquaculture as an emerging and more sustainable food source than wild-caught fish.

*Discussion summaries were collated by Dr Nick Smith, based on written notes collected from the tables in the room and video recordings of the facilitated discussion sessions on the day.