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Do Japanese Accept Cultured Meat for Increasing Meat Demand?

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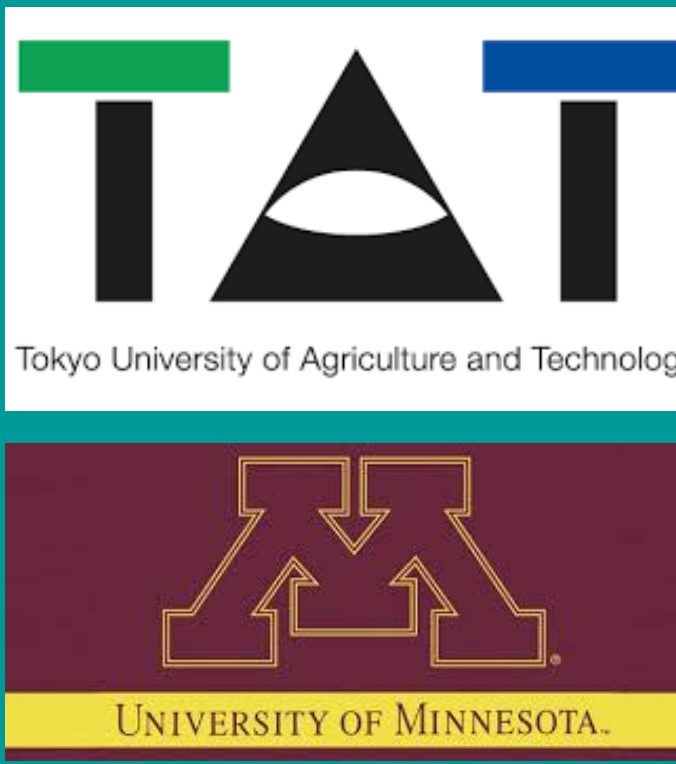
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CULTURED MEAT

- ✓ Tissue engineering techniques including stem cell technology have achieved much progress.
- ✓ Cultured meat, or in-vitro meat, is one of future food, where meat is produced outside animals in a sterile, laboratory environment.
- ✓ First introduced by Dutch scientists in 2013, this meat will be on our table near future, with an American company embarking with venture capital funds (Washington Post, 2016).
- ✓ Cultured meat has much potential for meeting increases in global meat demand while reducing environmental impacts of livestock production and slaughter of animals (Post 2012).
- ✓ Nonetheless, high costs remain to be addressed as well as ethical and religious considerations around the world.

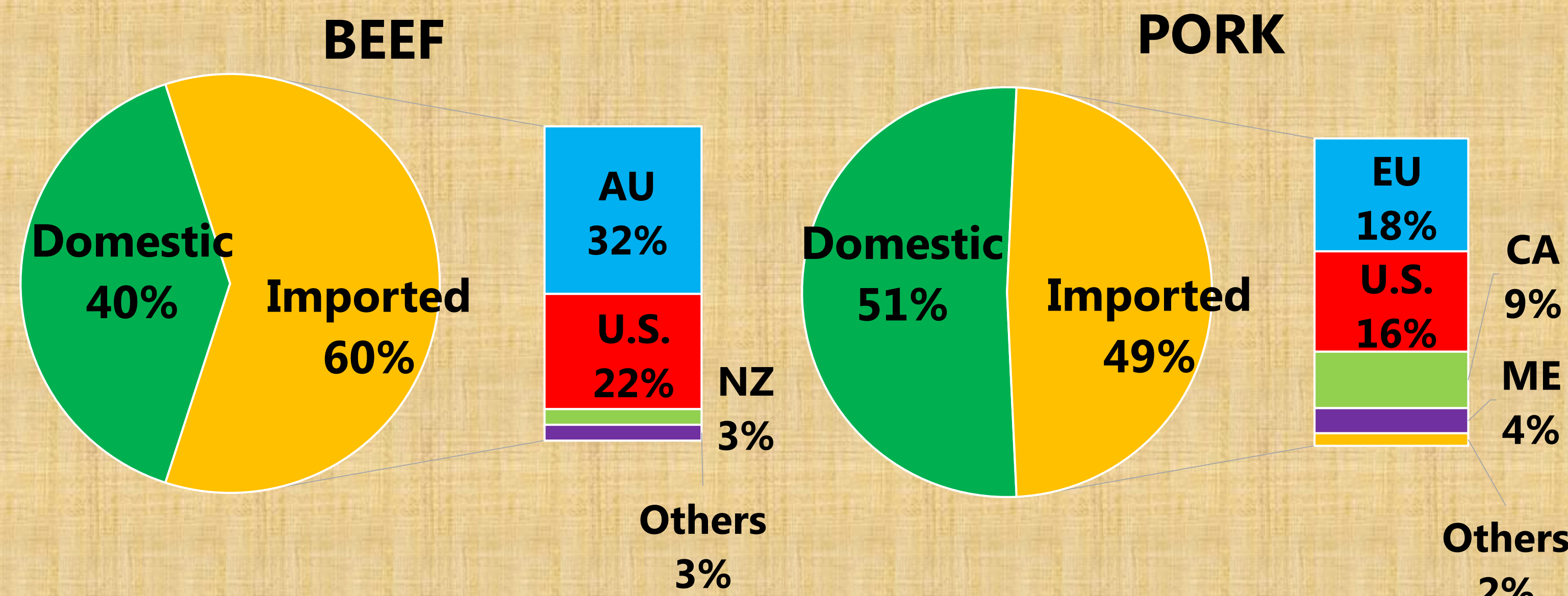


- ✓ Consumer reactions for cultured meat have been studied in European (Verbeke et al. 2015), however, no study exists on reactions of Asian consumers, who will likely become one of the largest groups of in-vitro meat customers.
- ✓ Consumers in Japan have strongly preferred toward domestically produced food, and reacted similar to Europeans toward GM food products, (Chern & Rickertsen 2001; McCluskey et al. 2003).
- ✓ Thus, they may find the increase in self-sufficiency of food items an attractive feature of cultured meat.

OBJECTIVES

- ✓ The study investigates Japanese consumers' preferences toward cultured pork meat and how they are affected by country of origin.

2014 MEAT DEMAND in JAPAN



MAFF, 2016

CONSUMER SURVEY & DESIGN

- ✓ The choice scenarios were developed using pork meat that varied by price (98, 128, and 158 yen per 100g), origin (domestic and two foreign countries), and production processes (cultured meat or no label).

Option A	Option B	Option C	Option D
			None of Them
Domestic Pork 158 yen Per 100g	Spanish Pork 128 yen Per 100g	US Cultured Pork 128 yen Per 100g	

- ✓ A total of 1,027 responses were collected online in February 2015 from a stratified, random nationwide sample.

RESULTS

- ✓ Ordered Probit results

Table 1. Estimated Results of Ordered Probit model: Safety for Purchasing Cultured Meat

	SF-Age20s		SF-Age30s		SF-Age40s		SF-Age50+	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Gender	0.4462 **	0.2126	0.2812	0.1889	0.5223 ***	0.1925	0.4138 ***	0.1134
Age20s	-0.0209	0.0403						
Age30s			0.0595 *	0.0329				
Age40s					-0.0046	0.0333		
Age50+							0.0128	0.0082
Bplus	0.0025	0.0075	0.0094	0.0177	-0.0058	0.0085	0.0131	0.0118
Hinc	-0.0412	0.0603	0.0037	0.0600	0.2137 ***	0.0802	0.0767 **	0.0324
Kids	0.1466	0.1053	0.0251	0.0686	0.0209	0.0843	-0.1370 ***	0.0499
Eathm	0.0500	0.0829	0.0675	0.0705	0.1307 *	0.0770	0.1932 ***	0.0444
Eatmt	-0.0294	0.1026	0.1017	0.0901	-0.0758	0.0970	0.0521	0.0583
Comdsf	-0.3650 **	0.1506	-0.0615	0.0730	-0.1224	0.1428	-0.0872 *	0.0519
Comisf	0.2084	0.1524	-0.0061	0.0756	-0.0768	0.1503	-0.0066	0.0547
No. Obs.	138		186		176		527	

Table 2. Estimated Results of Ordered Probit model: County-Of-Origin for Purchasing Cultured Meat

	COO-Age20s		COO-Age30s		COO-Age40s		COO-Age50+	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Gender	0.5702 ***	0.1961	0.2446	0.1783	0.5281 ***	0.1760	0.5366 ***	0.1057
Age20s	0.0121	0.0366						
Age30s			0.0261	0.0318				
Age40s					0.0102	0.0303		
Age50+							0.0160	0.0077
Bplus	0.0053	0.0069	0.0170	0.0171	0.0033	0.0085	-0.0038	0.0065
Hinc	-0.0081	0.0575	0.0726	0.0585	0.1596 **	0.0722	0.0290 **	0.0293
Kids	0.2354 **	0.0965	0.0919	0.0655	0.0470	0.0788	-0.0487	0.0477
Eathm	0.0758	0.0748	-0.0122	0.0696	0.2127 ***	0.0730	0.1108 ***	0.0428
Eatmt	0.0182	0.0914	-0.0603	0.0861	-0.1639 *	0.0869	-0.0373	0.0545
Comdsf	-0.4063 ***	0.1264	-0.0780	0.0705	-0.0929	0.1192	-0.1364 ***	0.0483
Comisf	0.2688	0.1267	0.0119	0.0731	-0.0755	0.1248	0.0539	0.0510
No. Obs.	138		186		176		527	

Note: ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively. SF and COO are self-reported changes in safety concern and country-of-origin for purchasing cultured meat products, respectively. Age20s, 30s, 40s and 50+ are age between 20 and 29, 30 and 39, 40 and 49, and over 50 years old, respectively. Bplus, Hinc, and Kids are respondents who have college or higher education, house income, and number of children, respectively. Eathm and Eatmt are number of meals at home and eat meat products per week, respectively. Comdsf (Comisf) is self-reported changes in cultured meat safety comparing with domestic (imported) meat.

CONCLUSIONS

- ✓ As other food researches, the respondents who are women, more house income, more kids, and more eat at home, increase self-reported changes in safety concern (SF) and country-of-origin (COO) for purchasing cultured meat products. They who believe cultured meat products are safer than domestic products, decrease SF and COO.

- ✓ Taken together, Japanese consumers are less negative for future cultured meat products unlike GMO introduction.

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