

Cultivate Tomorrow Submission

Team: CellAg Safety Squad

Track: Science Communication

Link to Instagram (our platform): <https://www.instagram.com/cultivatesafety/?hl=en>

Instagram handle: @cultivatesafety

Background/Importance

Cellular agriculture is a much-needed technological revolution for the current food system. The farming of cells instead of animals holds numerous potential benefits related to food security, animal welfare, environmental sustainability, and public health (**Post #1**). However, cellular agriculture presents challenges. Further technological advancements are needed in various areas including scaling up production, lowering production costs, and matching the taste/texture of conventionally-produced food products (**Post #2, Question 1**).

Another major hurdle is consumer acceptance. Consumer acceptance is vital to successfully transforming the food industry. Yet, in a recent study, about 67% of young adults thought cultivated meat is “somewhat” or “very” unnatural (**Ruzgys and Pickering 2020**). The CellAg Safety Squad tackled the hurdle of public misunderstanding and fear of new “artificial” foods through an Instagram page dedicated to the food safety aspects of cellular agriculture, with a target audience of college-age young adults age 18-24 (**Ruzgys and Pickering 2020; Bogueva and Marinova, 2020**). We chose college-age young adults because they are young enough to be open to new ideas, yet old enough to be both consumers of and potential contributors to this emerging field. Transparency in food production is likely to increase consumer trust and acceptance (**Lam et al., 2020**), so our aim was to provide this much-needed transparency in topics related to CellAg food safety (**Question 3, 4**).

Methodology

The CellAg Safety Squad used Instagram as our platform to engage college-age students (**Question 3**), given that 3 out of 4 U.S. young adults age 18-24 report using Instagram (**Pew Research Center, 2021**). We wanted to create an approachable space where we could communicate with the public while maintaining creative control.

Our main form of communication with our audience was through informational posts about different safety aspects related to CellAg, roughly following the CellAg processing steps identified by **Ong et al., 2021**: cell procurement (**Post #4-5**), cell preparation (**Post #4-5**), biomass production (**Post #6**), product collection (**Post #7**), and food processing (**Post #9**)

(Question 4). We used targeted Instagram boosts to make our posts more visible to our target audience (age 18-24). For each targeted boost, over 90% of the people we reached were indeed aged 18-24, according to our account analytics. We further engaged our audience through frequent stories and labeled highlight reels (**Question 6, Appendix 1c**).

The aim of the first few posts was to provide easy-to-follow introductions to the CellAg industry and processes in general and to establish reader trust with accurate information (**Post #1-3, Question 1**). To address the CellAg fears and concerns of college students, our posts highlighted the relevance of CellAg to timely and important topics such as zoonotic disease (**Post #4**), edible cell lines (**Post #5**), and genetic modification (**Post #8**). We also discussed safety challenges related to individual steps during food production (**Post #4-7,9, Question 6**).

We delivered highly researched and substantively-rich material to our audience in fun, visually appealing posts designed through Canva. Each post balanced informational text with well-placed graphics. We simplified concepts and avoided jargon that could alienate audience members from nonscientific backgrounds, while sticking to facts from peer-reviewed research papers and other trusted sources (**Question 1, 3, 4, 5**). We ended each post with a list of the online resources we used in gathering information for our slides. Showcasing these resources allows our audience to verify the accuracy of our information and invites them to do further research on specific topics addressed in each post, without having to dig through the internet for sources themselves (**Question 2, 6**).

Significance

Our Cultivate Safety Instagram account brought awareness of the cellular agriculture industry and engaged college students by addressing concerns of food safety. We conveyed the importance and urgency of adapting CellAg technology by discussing the negative effects of climate change, factory farming, zoonotic disease, and food insecurity, including how CellAg can help mitigate these negative events (**Post #1,4**). The urgency of finding solutions to the barriers facing the CellAg industry was highlighted in our New Year's Resolutions post (**Post #2, Question 5**). We also engaged with other creators in the space of CellAg by tagging them where appropriate and sharing their posts in our stories, with added commentary/images, to cross-promote (**Question 4, Appendix 1c**). We had engagement from leading companies in the cellular agriculture space including Perfect Day, Wildtype, and Because Animals (**Appendix 1b**). In addition, we received supportive messages and comments from individuals and a shoutout from Youth Climate Save Canada (**Appendix 1b**). We even received a job offer from a vegan

organization in a comment on one of our posts (**Appendix 1b**), which is encouraging given our potential career interests in science communication.

We tackled controversial topics including genetically modified organisms (**Post #8**); cell collection from animals (**Post #4-5**); and the many unknowns that the field is actively solving. We knew based on our own experiences and readings that our audience would likely be concerned about these issues, so we did not shy away from them. For example, we explained what genetic modification is and how it is applied for specific processes in cellular agriculture and other areas, and what science says about its safety (**Post #8**). We also tackled complex issues such as immortalized stem cell lines (**Post #5**); how scaffolding is created and broken down (**Post #6-7**); how the bioreactor environment in which cells grow is kept safe (**Post #6-7**); and how cell growth media is slowly becoming fully animal-free (**Post #6, Question 3, 4, 6**).

Our strategy to prevent backlash (which we successfully avoided, receiving only positive feedback) was to anticipate concerns and address them one by one, often dedicating entire slides to a single issue (e.g. allergenicity; **Post #9**) and using friendly language that was neither arrogant nor hesitant. We frequently employed analogies to make new concepts more familiar, e.g. comparing microorganisms in precision fermentation to mini factories in order to provide relatable imagery and reduce confusion (**Post #3, Question 1, 4, 6**).

As of February 1, 2022, we accomplished the following (Appendix 1a, 1b, 1c):

- ★ Created 10 posts and 50 stories
- ★ Earned 120 followers
- ★ Reached over 11,100 accounts
- ★ Received 243 content interactions
 - Includes 219 post interactions: 143 likes, 5 comments, 34 post saves
- ★ Curated audience composed primarily of 18-24 year olds (88.7%) in the U.S. (96.7%)

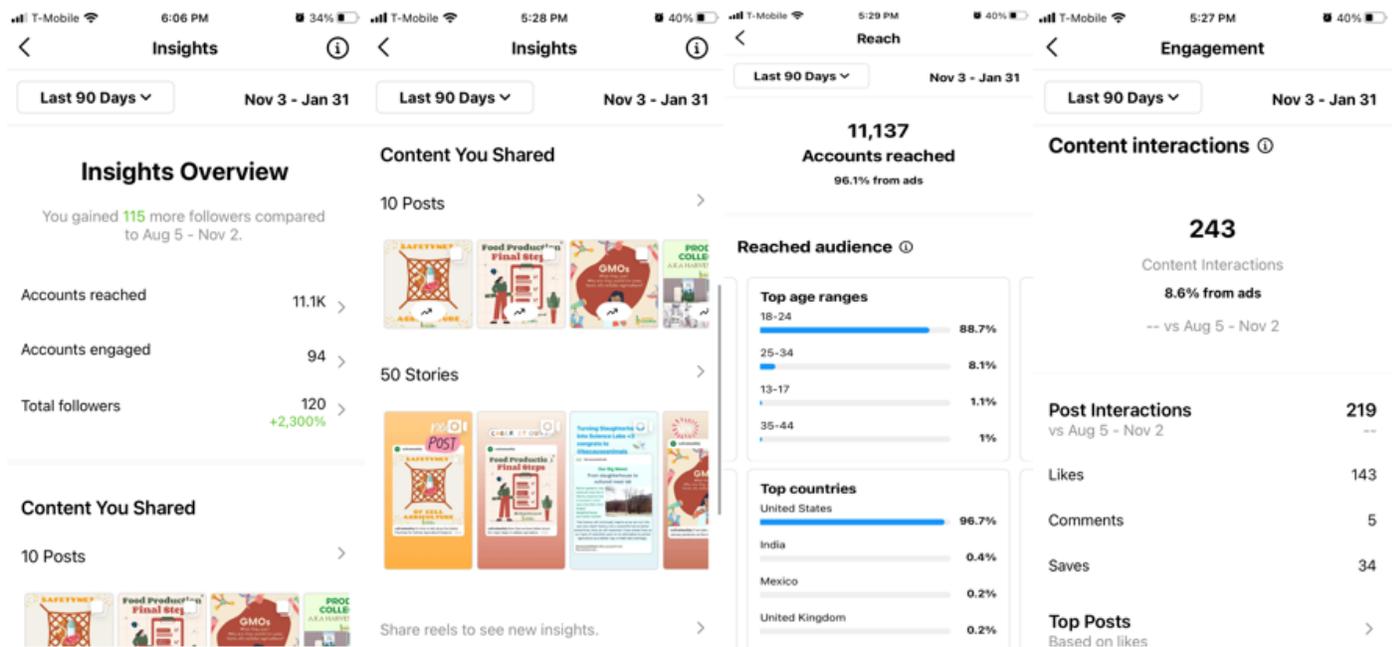
Future Directions

Persistent concerns about food safety are addressed in our 10th (summary) post that describes the multiple safety measures in place for best safety practices and testing during food production (**Post #10**). Our Instagram posts invite viewers to engage with questions to facilitate further conversation and refer readers to additional resources for more in-depth learning. We plan to continue to update our account with relevant CellAg news related to safety, as well as general CellAg industry progression (**Question 2**), through future posts and stories.

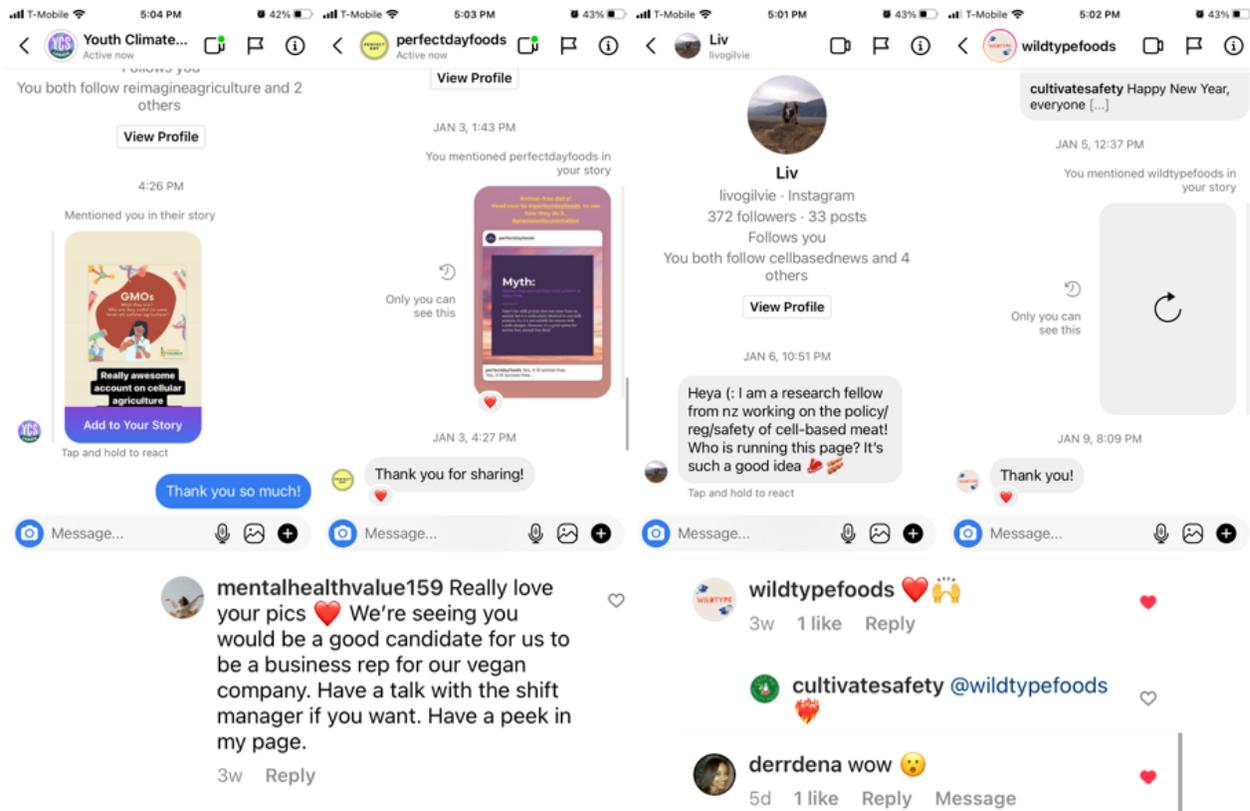
References

1. Bogueva, D., & Marinova, D. (2020). Cultured Meat and Australia's Generation Z. *Frontiers in nutrition*, 7, 148. <https://doi.org/10.3389/fnut.2020.00148>
2. Lam, T. K., Heales, J., Hartley, N., & Hodgkinson, C. (2020). Consumer Trust in Food Safety Requires Information Transparency. *Australasian Journal of Information Systems*, 24. <https://doi.org/10.3127/ajis.v24i0.2219>
3. Ong, K. J., Johnston, J., Datar, I., Sewalt, V., Holmes, D., & Shatkin, J. A. (2021). Food safety considerations and research priorities for the cultured meat and seafood industry. *Comprehensive Reviews in Food Science and Food Safety*, 20(6), 5421-5448.
4. Ruzgys, S., & Pickering, G. J. (2020). Perceptions of cultured meat among youth and messaging strategies. *Frontiers in Sustainable Food Systems*, 4, 122.
5. Pew Research Center, April 2021, "Social Media Use in 2021"

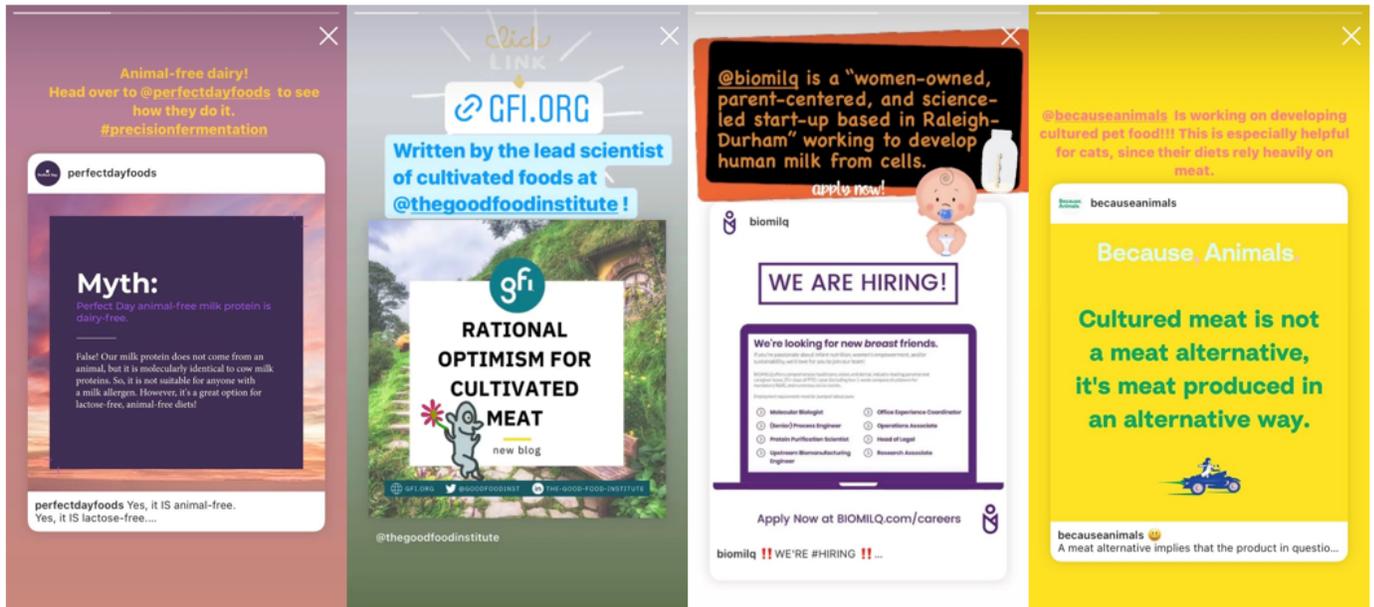
Appendix 1a: Audience Engagement - Insights



Appendix 1b: Audience Engagement - Comments and Messages



Appendix 1c: Sample Stories



Appendix 2: Title Slides of Posts #1-10



Post #1

Post #2

Post #3

Post #4



Post #5

Post #6

Post #7

Post #8



Post #9

Post #10