Proceedings of the Nutrition Society (2023), **82 (OCE5)**, E323 doi:10.1017/S0029665123004226

Summer Conference 2023, 3–6 July 2023, Nutrition at key stages of the lifecycle

Growing greener: Investigating the knowledge and attitudes of UK university students towards vertical farming

I. McLaughlin, A. Clark and T. R. Hill

Human Nutrition and Exercise Research Centre, Population Health Sciences Institute, Faculty of Medical Sciences, Newcastle University, UK

With the growing population projected to require a 60% increase in food production[1], vertical farming (VF) could offer a sustainable solution. Universities may serve as beacons for sustainability[2] by implementing VF onto campuses. However, consumer acceptance towards VF is paramount to predicting its success. This study aimed to investigate the knowledge and attitudes of UK university students towards VF and scope the potential for implementation onto campuses.

Between December 2022- January 2023, a Google Forms questionnaire was disseminated among UK university students aged 18–30. The questionnaire, which consisted of 36 questions, was shared through social media and Meta advertising. The questionnaire sections comprised of demographics, dietary and food purchasing characteristics, willingness to pay (WTP) and attitudes towards agricultural topics and university VF implementation. Three hundred and eight eligible participants were included in data analysis. Statistical analysis was conducted using SPSS (Version 28.0). A chi-squared test was conducted to explore differences within demographics and dietary and food purchasing characteristics. A Kruskal- Wallis test with pairwise comparisons corrected using Bonferroni test determined differences between demographic and dietary and food purchasing characteristics, and attitudes towards agriculture and university VF implementation. An exploratory factor analysis with varimax rotation was performed to understand the drivers in attitudes towards VF. WTP was coded in NVivo (Version 1.6.1) and categorised according to WTP more, less, or equal compared to the same conventionally farmed product.

Overall, students perceived VF positively. Those with greater perceived agricultural knowledge were more likely to have heard of VF prior to questionnaire initiation ($p = 0.000$). Students who had previously heard of VF were less concerned about artificial lighting in food production ($p = 0.001$), the nutritional quality of VF produce ($p = 0.003$), and more concerned about food miles ($p = 0.000$) compared to those who had never heard of VF. There were significant differences in attitudes towards VF between STEM and non-STEM students; vegans, vegetarians and those who followed neither diet; age group; degree stage and between students with differing levels of food purchase frequency from their university campus. The exploratory factor analysis identified negative attitudes towards conventional agriculture as the primary driver of VF acceptance, followed by trust towards the health and safety aspects of VF, acceptance of VF on university campuses, and acceptance towards the holistic benefits associated with VF. The majority of students were WTP equal price between VF and conventionally farmed produce (n = 240; 78.0%). Financial constraints were the primary barrier to unwillingness to pay more for VF produce (n = 142; 44.0%).

UK university students may be a key audience in promoting VF. Implementation of university campus VF has potential, provided that they are coupled with increased agricultural education and a price cap no greater than that of conventional produce.

References

1. Food and Agriculture Organization of the United Nations. *Home Gardens/Vertical Farming, Hydroponics and Aquaponics* [Available at: https://www.fao.org/land-water/overview/covid19/homegardens/en/].
2. Bauer M, Rieckmann M, Niedlich S *et al.* (2021) *Front Sustain* **2**, 1–4.