

# Identifying the Knowledge, Attitudes and Practice of the Purchasing and Consumption of Pulses across a Sample of UK Adult Population

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### Introduction

England has a growing burden of obesity and overweight<sup>1</sup>, alongside a global food crisis relating to the cost, scarcity and sustainability of food<sup>2</sup>. Pulses play an important role in the solution to these two issues because:

- They are sustainable, accessible and relatively cheap source of food and protein<sup>2</sup>
- Pulse crops reduce greenhouse gas emissions, nitrogen use and land use<sup>3</sup>
- They are beneficial in the prevention and treatment of obesity<sup>4</sup>
- They reduce the risk of all-cause mortality, certain cancers, cardiovascular disease and diabetes<sup>3</sup>

However, there is a paucity of research on the consumption of pulses in the UK.

### Study Aims

1. To identify patterns in the consumption of pulses within different socio-demographic groups.
2. To describe the general population's knowledge of pulses.
3. To identify specific barriers and drivers to the consumption of pulses.
4. To identify common practices in the consumption of pulses.
5. To identify from which retailers' pulses are regularly purchased.

### Methods

Utilised a mixed method approach by employing an anonymous, self-administered, non-interventional web-based survey.

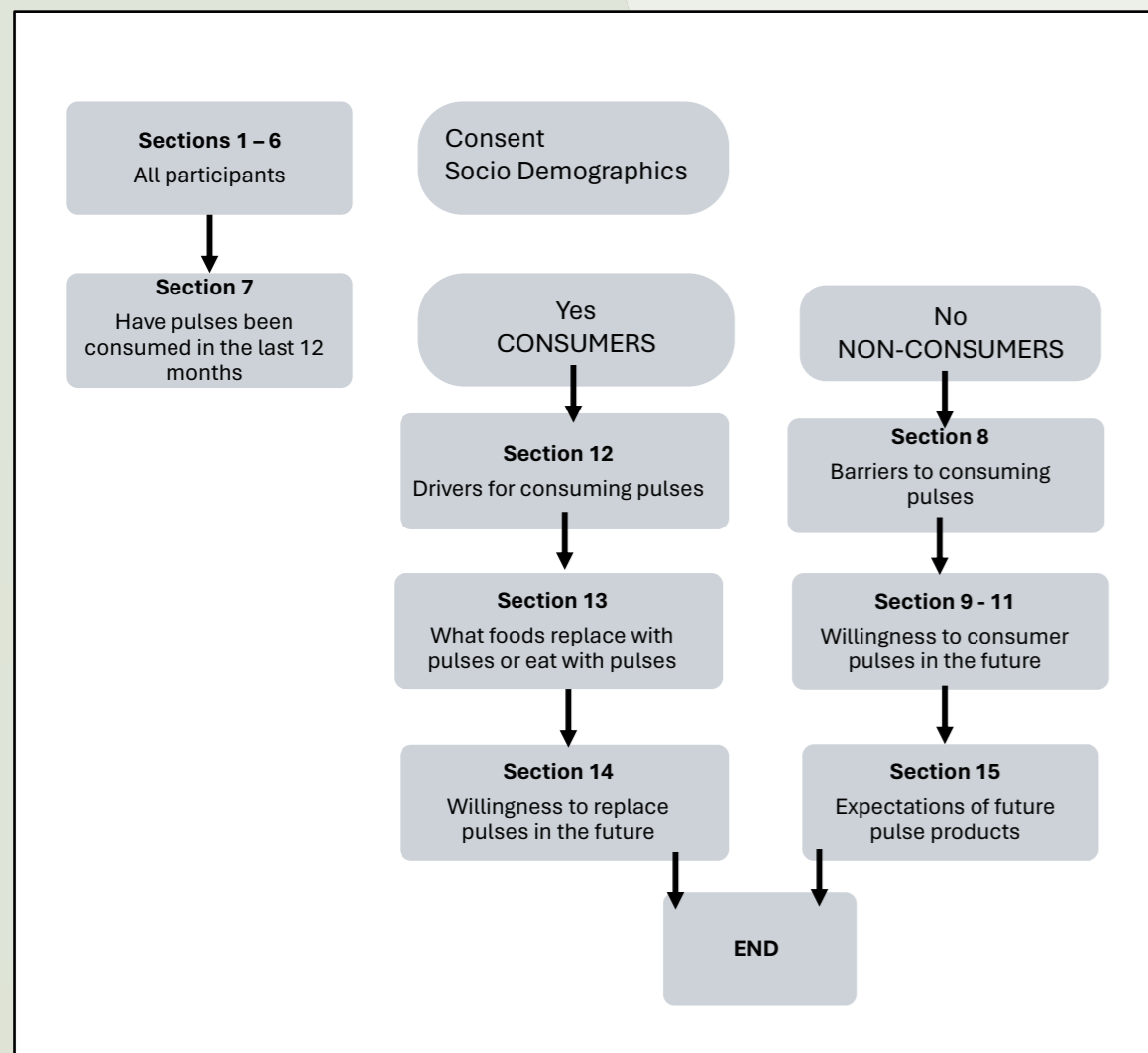


Figure 1 – Survey Flow

Data was analysed using IBM SPSS Statistical Software Version 29.0.0. using frequency, Chi Squared or Fisher's Exact tests to identify associations.

### Results

61 participants completed the survey. Majority were female (n=41), consumers of pulses (n=59), under 41 years of age (n=30), of White British background (n=46) and omnivore (n=41)

Overall high frequency, high familiarity was evident with statistically significant associations between:

- frequency and variety of pulses  $\chi^2(4)=25.844, p<0.001$ .
- frequency and dietary preference  $\chi^2(2)=11.497, p=0.003$
- age and variety of pulses  $\chi^2(2)=6.02, p=0.048$

Table 1- Familiarity<sup>1</sup>, Frequency<sup>2</sup> and Variety<sup>3</sup> of Pulse Consumption

| Characteristic (n=61) | Low   | Medium | High  |
|-----------------------|-------|--------|-------|
| Frequency             | 19.7% | 6.2%   | 54.1% |
| Familiarity           |       | 4.9%   | 95.1% |
| Variety               | 36.1% | 52.5%  | 11.5% |

- 1 – Knowledge pulses (low scored < 5, medium <10, high > 10)
- 2 – Time pulses eaten in a month (low scored < 2, medium , <=10, high > 10)
- 3 – Number of different pulses consumed (low scored < 5, medium < 10, high >= 10)

- Health was cited as the main reason (39.6%) for consuming pulses and identified as the most common driver for consuming pulses (39.66%). Followed by sustainability (22.34%), convenience (21.79%) and sensory (16.21%). An association was identified between age and convenience  $\chi^2=34.630 p=0.004$ .
- Participants were provided with four identifiers for pulses. “Being Healthy” was the strongest identifier (86.9%). The other three identifiers ranked were “Being Filling” (63.9%), “Being Natural” (54.1%) and “Being Bland” (7.1%).
- This pattern was repeated when participants linked the identifier to specific pulse varieties (Figure 2).

- Red kidney beans(13.2%), dried yellow split peas(13.2%), chickpeas(12.7%), and red lentils(9.1%) were reported as most common pulses consumed.

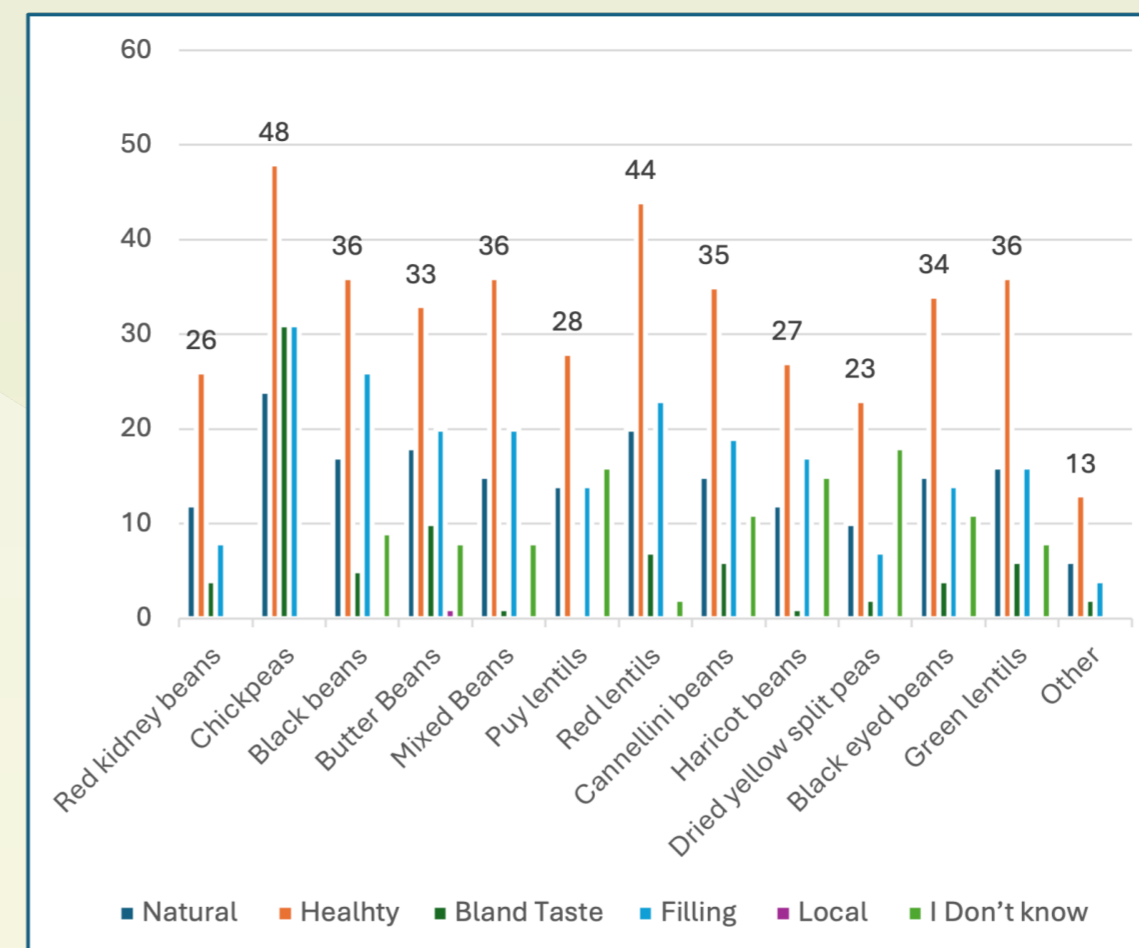


Figure 2 – How Consumers Identify with Different Pulses

- 88% of all pulses are consumed within the home.
- Most pulses were purchased at either Co-Op (19.93%) and M&S (19.61%), followed by Waitrose (15.03%) and Sainsbury (11.11%).

- Statistically significant associations were identified between age and being healthy identifier ( $\chi^2=10.1060, p=0.001$ ) and ethnicity and being filling identifier ( $\chi^2=8.078, p=0.011$ ).
- Pulses are most frequently paired with vegetables (24.6%) followed by poultry(10.54%) and then beef (9.74) (Figure 3).

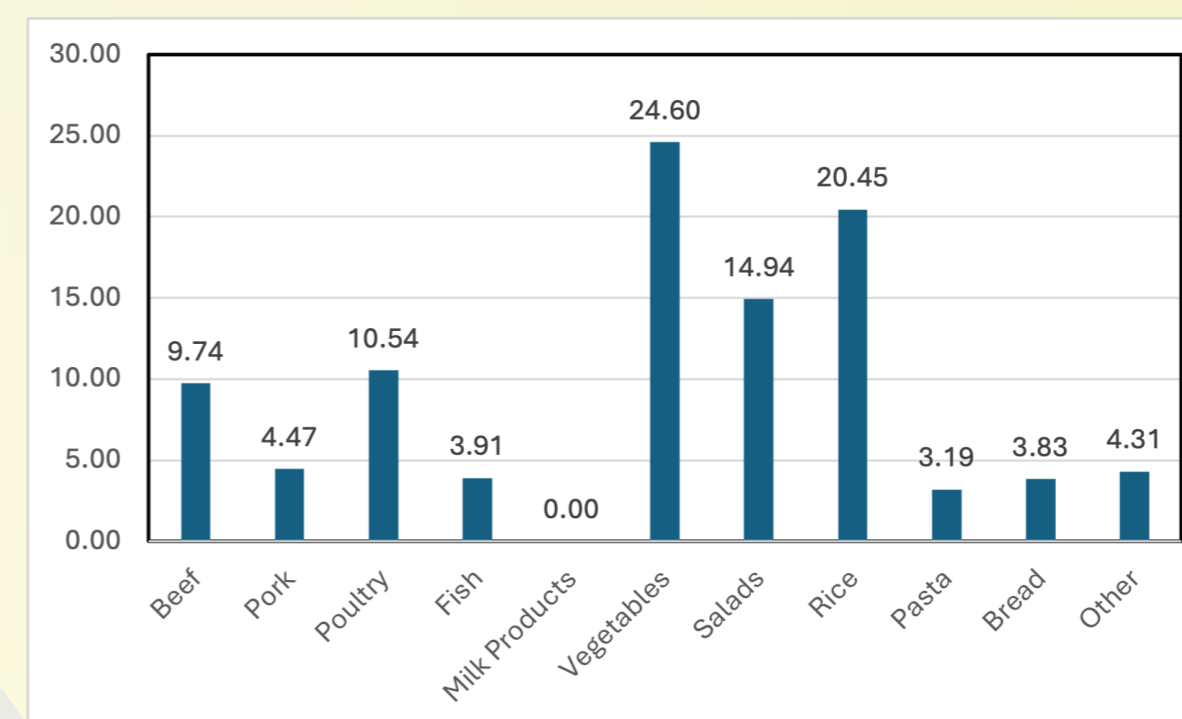


Figure 3 - Food and Pulse Pairings

- There was a strong agreement about replacing meat products with pulses (41%), replacing meat with pulse-based products (24.6%) and replacing meat with pulse-based meat substitutes (27.9%).

### Conclusions

- On average participants consumed pulses 7 times a month which is more than the level of “2-3 times a month” established for the UK (n=1000) by Henn *et al.* (2022).
- Health is the main driver for consuming pulses, with age and ethnicity having the strongest associations. Health is reported as a strong and common reason for moving to vegetarian or plant-based diet<sup>7</sup>.
- Regardless of levels of familiarity or frequency of pulse consumption, only a small variety of pulses are consumed which could be influenced by supplier and or buyer demand or the Mere Exposure Effect<sup>10</sup>.
- Pulses are commonly paired with vegetables to boost the protein content of a meal or with beef or poultry.
- Consumer reported using pulses to replace meat protein to reduce meat consumption as a strategy for improving health. This approach is considered both appealing and achievable<sup>6</sup>
- The top four retailers represent a mix of high and middle-priced supermarkets which is reflection of majority of participants (57.4%) earning >£55,000<sup>8</sup>.
- Ethnicity and economic status play a role in the choice of dietary protein<sup>9</sup>.
- The promotion of pulse consumption should be in conjunction with healthy eating emphasising the change as a pathway to reducing meat consumption rather than moving to a vegan or vegetarian diet.
- Owing to the small sample size further research is required to reach a wider and more diverse population sample to determine:
  - the impact of the various socio-demographics on the consumption of pulses
  - what the barriers and drivers for consumption are
  - why people are eating so few varieties of pulses

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