

EQUI-FOOD

Environmental Quality Impact on Urban Food Growing for Better Health and Wellbeing



Study Outline

- ❖ RQ1: How do we *simply* measure quality of soil and water in urban ecosystems?
- ❖ RQ2: How do we compare perceived quality over measured quality?
- ❖ RQ3: How does an understanding of soil quality relate to nature connectedness and benefits to health and wellbeing

Study Methodology

- **Baseline survey** included the 'Warwick-Edinburgh Mental Wellbeing Scales' (WEMWBS) and the Nature Connectedness Survey developed by Natural England.
- **Kits** included instructions, borage seeds, bags and envelopes for both soil samples, a soil monitor, a canvas strip and bodger.
- **Soil samples** sent for analysis at start and end of survey
- How have participants nature connectedness and WEMWBS changed? How has the soil changed? How healthy is the soil and is the perceived health influenced by experience?

THE METHODOLOGY...



Stage 1: Recruitment and advertisement

Stage 2: Information sheet and informed consent

Stage 3: Username administration and baseline survey

Stage 4: Kits sent

Stage 5: "where I planted my borage" and soil samples

Stage 6: Fortnightly soil diaries (12 weeks)

Stage 7: Final survey and soil sample

Now: Data Analysis



Distribution of participants

Number of participants = 130

Over 350 enquiries

Rooftop sites = 4

Started May 2022

Logging growth weeks 1 - 12

Due to finish October 2022



Where did people plant?

“This is the corner of the yard that doesn’t get much sunlight. It’s original soil when I moved in (Renting) about five years ago. Previous tenant seemed to have added some brown stone ball things on top but the soil itself seems quite sandy. Nothing has been added to it.”



Rooftop Growing

Paired rooftop and ground level planters set up in four city locations

- Cardiff
- Pontypool
- Cirencester (campus & parish church)
- Liverpool (campus & all saints church)

Monitoring soil chemistry (heavy metals) and microbial activity through cotton degradation, as well as borage growth



Results from survey participants

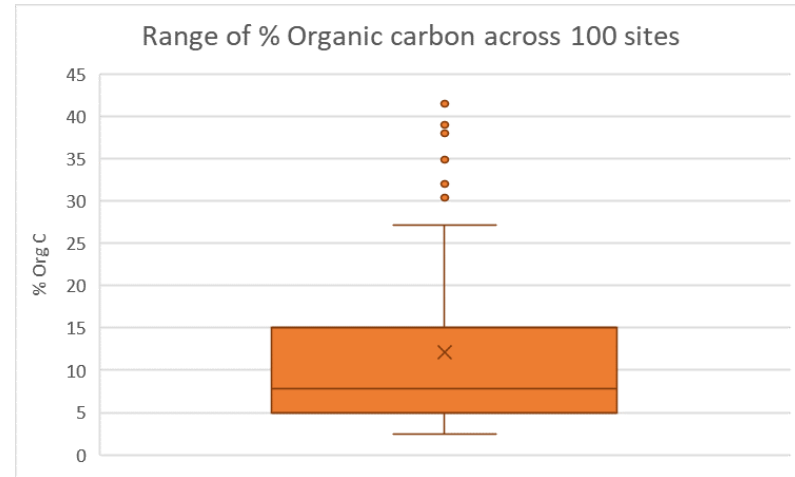
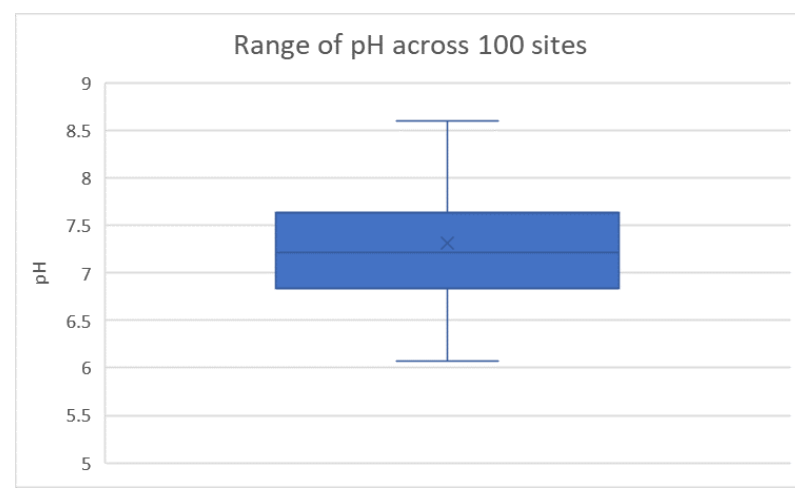
- **Location:** 28.5% urban; 66.2% semi-urban/suburban; 5.4% other (e.g. rural town, edge of village etc)
- **Growing Status:** 30% novice; 70% experienced
- **“Rate your growing experience on a 1-10 scale”:**
Mean = 5.26
- **WEMBES:** M = 47.72; SD = .84 (min = 25/max = 70)
- **Nature Connectedness:** M = 76.28; SD = 2.11
(min = 3/max = 100)



Soil survey

Processing 125 samples

Testing pH, organic C, total C, total N,
and full elemental analysis (Mg - Bi)



How have people engaged?



Can you describe the colour, texture, smell, temperature, moisture, creepy crawlies, wildlife or any growth? Go on get your hands in there and tell us how it feels!

After a night of rain the soil is now wet and smells fresh. it is dark brown and crumbles easily. The borage has come on since the weather has cooled and is wetter. flower buds are now showing and thr plants look healthy. There is evidence of snails and slugs.



Week 1

Week 4

Week 6

Week 8

Week 10



Week 1

Week 4

Week 6

Week 8

Week 10

What worked well and what didn't

How could we do things differently?

350+ initial enquiries expressing interest popular sparked interest - initial engagement and recruitment levels high.

BUT too large a scale - statistically valid but very challenging to manage enquiries and check-ins.

Kit preparation intermittent over 6 weeks presented challenges for distribution and sometimes delays.

Having to manually contact people to encourage participation and send reminders has been very time consuming needs to be automated in the future.

Improving communications to help support participation especially around onboarding and reducing number of weeks for participation.

Better feedback loops sharing diary content from each week between participants.

One mode of entry should be used for diaries - not app and website - only one to avoid confusion

Control group taking part in the study not actually growing anything.

What's next?

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Funding proposal, how we move forward?

