

## BACKGROUND

The growing trend of plant-based food diets implies new products to cover consumer requirements, like **meat analogues**.

## AIMS

1. To obtain **contrasted information** about **characteristics**, **formulation** and **processing** of meat analogues.
2. To know the **reasons** why they might suppose a **good alternative** to meat and meat products.
3. To investigate which products are in the market and why they are **gaining importance among consumers**.
4. To know which **benefits** meat analogues have over meat and meat products.

## INGREDIENTS AND ADDITIVES

**Proteins** → Structure

- Soybean
- Wheat



**Fats and oils** → Juiciness and tenderness

- Sunflower oil
- Coconut oil

**Cohesion agents** → Binding

- Flour
- Starch

**Flavours, colours and spices** → Flavour and colour

- Pomegranate extract
- Leg-hemoglobin
- Black pepper

**Vitamins and minerals** → Enrichment

- Vitamin B12

## TECHNOLOGY

**High moisture extrusion**

Fibrous texture formation

**Third generation meat analogue**



Fig 1. Plant-based burger. Source: <https://www.washingtonpost.com/news/voraciously/wp/2019/06/25/beyond-meats-latest-plant-based-burger-is-meatier-juicier-and-a-big-step-closer-to-beef/>

## REASONS TO CHOOSE THEM = BENEFITS

### Nutritional

- Good source of proteins
- More fibre
- Less saturated fatty acids
- No cholesterol

### Environmental

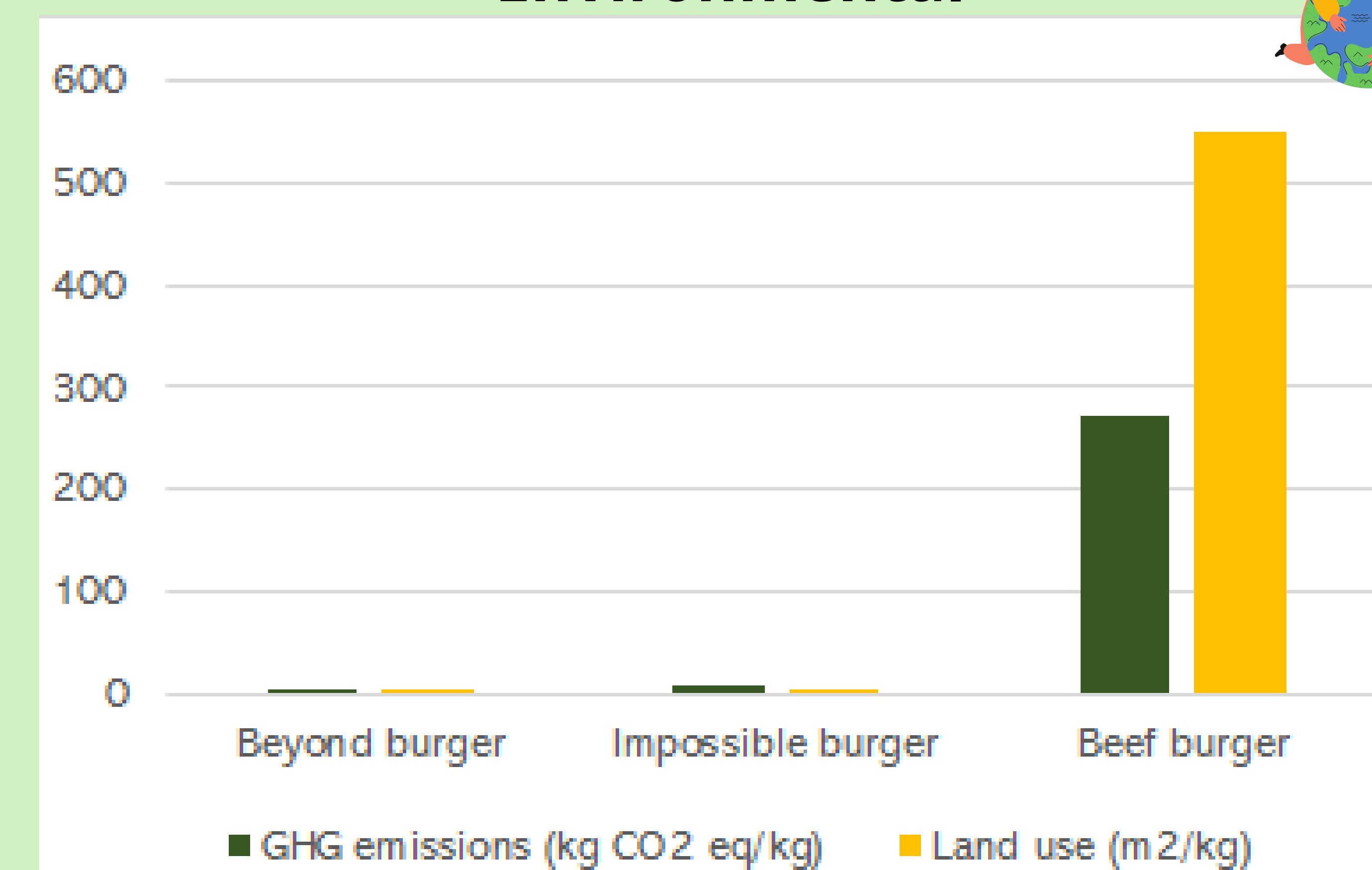
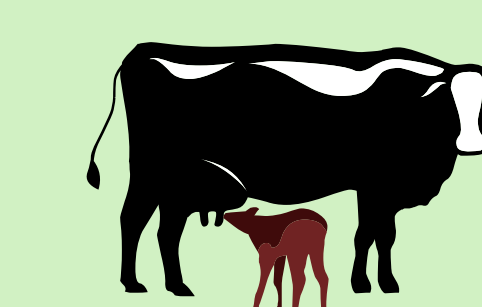


Fig 2. Plant-based burger and beef burger impact on greenhouse gas emissions (GHG) and land use. Source: edited figure from Heller and Keoleian (2018) and Khan et al. (2019).

### Ethical



- Animals are not slaughtered
- Suitable for some religions and cultures

## CONCLUSIONS

1. Meat analogues have **physicochemical** and **sensory characteristics** that allow to **imitate** meat texture and taste.
2. They are gaining importance due to the growing awareness of the role of food in **health**, **climate change** and **animal welfare**.
3. They have some **nutritional benefits**, are **more sustainable** and imply **no slaughtered animals**.
4. Meat analogues will make possible a **new future with less consumption of meat and meat products**.

## References

- Heller MC, Keoleian GA. 2018. Beyond Meat's Beyond Burger life cycle assessment: A detailed comparison between a plant-based and an animal-based protein source. University of Michigan, Center for Sustainable Systems, Ann Arbor, Michigan, USA.
- Khan S, Loyola C, Dettling J, Hester J, Moses R. 2019. Comparative environmental LCA of the Impossible Burger with conventional ground beef burger. Quantis International, Lausana, Suïssa.