

[https://www.google.com/url?sa=i&url=https%3A%2F%2F3.de%2Ffood%2Ffleischausdemlaboristkeinealternative669.html&psig=AOvVaw3LtJ6iDt50CdoQzXmVKC&ust=1622129576257000&source=mages&cd=vfe&ved=0CAIQjRxqFwoTCNCfydzV5\\_ACFOAAAAAdAAAAABAg](https://www.google.com/url?sa=i&url=https%3A%2F%2F3.de%2Ffood%2Ffleischausdemlaboristkeinealternative669.html&psig=AOvVaw3LtJ6iDt50CdoQzXmVKC&ust=1622129576257000&source=mages&cd=vfe&ved=0CAIQjRxqFwoTCNCfydzV5_ACFOAAAAAdAAAAABAg)

# In-vitro-meat

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# Table of contents

- What is the "Projektkurs" about?
- What is In-vitro-meat?
- Advantages for production in the laboratory
- Why did we choose this topic?
- In-vitro-meat with algae serum
- Summary video
- Survey
- Evaluation of the survey
- Example Singapore
- Conclusion
- Sources

# What is the "Projektkurs" about?

- Topic: Bioeconomy in the Rhenish Revier
  - Bioeconomy:
    - An economic system → based on renewable raw materials:
      - e.g. coal, crude oil & natural gas → replace by renewable raw materials



[https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.helmholtz.de%2Ferde-undumwelt%2Fwasistbiooekonomie%2F&psig=AOvVaw12kQYME28Tws\\_mhB3l4CzA&ust=1622132716353000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCOj527Xh5\\_ACFQAAAAAdAAA AABAA](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.helmholtz.de%2Ferde-undumwelt%2Fwasistbiooekonomie%2F&psig=AOvVaw12kQYME28Tws_mhB3l4CzA&ust=1622132716353000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCOj527Xh5_ACFQAAAAAdAAA AABAA)



# What is In-vitro-meat?

- → Meat substitute produced in test tube
- *Production:*
  - Removal of a muscle stem cell from a living animal
  - Cultivation in the test tube by nutrient solution
  - Calf serum

# Advantages for production in the laboratory

- Reduction of mass animal farming
- Reduction of wastewater through e.g. eutrophication
- Possible production of healthier meat
- Potential to cover the meat demand of the population
- Reduction of greenhouse gases
- Disadvantage: Still dying of the animals in some productions



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.ernaehrungs-umschau.de%2Fnews%2F15-01-2018-in-vitro-fleisch-und-seine-verbraucherakzeptanz%2F&psig=AOvVaw0Sp4WoH1PsXDwHA3iZnEfe&ust=1622133681762000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCJDInoLI5-A CFQAAAAAdAAAAABAE>

# Why did we choose this topic?

- For interest
- Taking a closer look at an alternative for conventional meat
- Environmental and climate protection



[https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.fleischwirtschaft.de%2Fproduktion-management%2Fnachrichten%2FIn-vitro-Fleisch-Lecker-wie-ein-echtes-Steak-38585&psig=AOvVaw0detGQbRDc6Jn5BLA7obEJ&ust=1622133967596000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPIz7Irm5\\_ACFQAAAAAdAAAAABAP](https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.fleischwirtschaft.de%2Fproduktion-management%2Fnachrichten%2FIn-vitro-Fleisch-Lecker-wie-ein-echtes-Steak-38585&psig=AOvVaw0detGQbRDc6Jn5BLA7obEJ&ust=1622133967596000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCPIz7Irm5_ACFQAAAAAdAAAAABAP)



## In-vitro-meat with algae serum

- Animal friendly alternatives based on algae, plants and fungi
- Advantages: Reduced consumption of water & land areas
- Disadvantage: Unemployment of farmers
- Goal: No animal has to die for meat production anymore

# Summary video



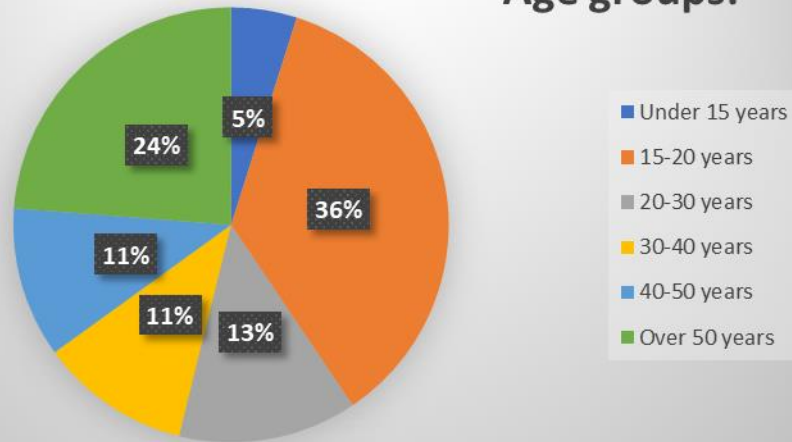


# Survey

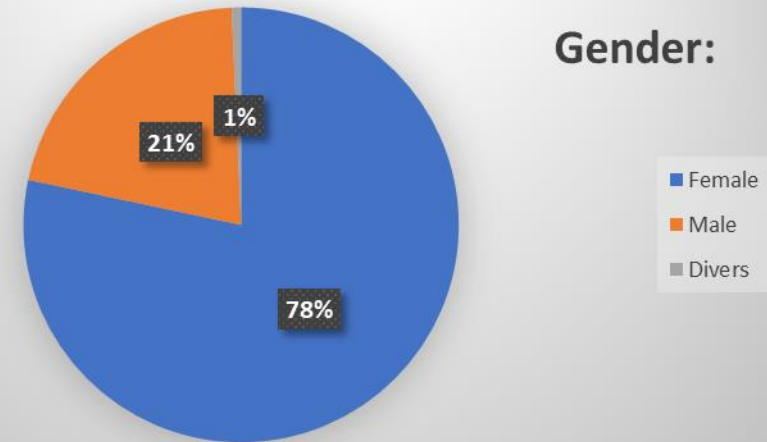
- *Guiding questions:*
  - How is the acceptance of the In-vitro-meat with the conventional calf serum and the algae serum received by the respondents and what effect does it have?
  - Would the acceptance increase with the use of vegan algae extracts?
  - What additional considerations should be made in the production of In-vitro-meat?
- Number of respondents: 143

# Evaluation of the survey

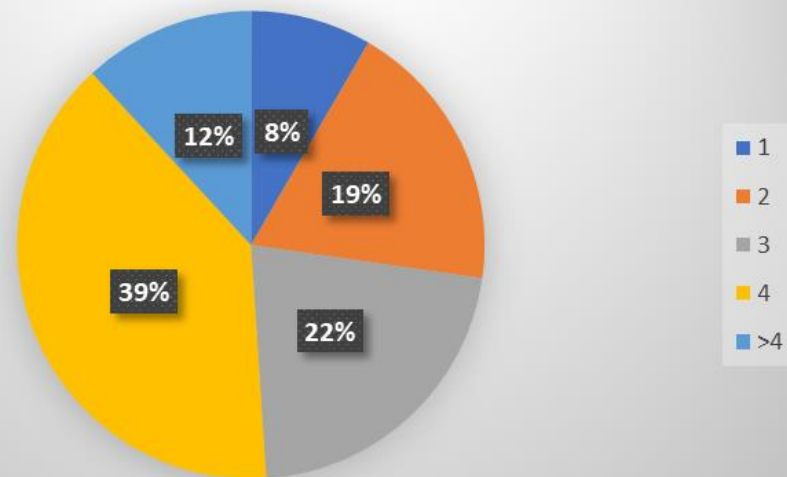
Age groups:



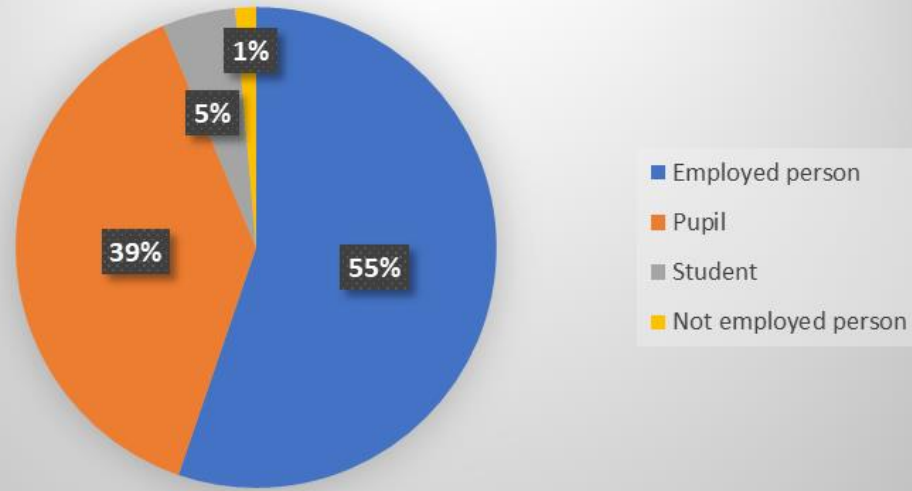
Gender:



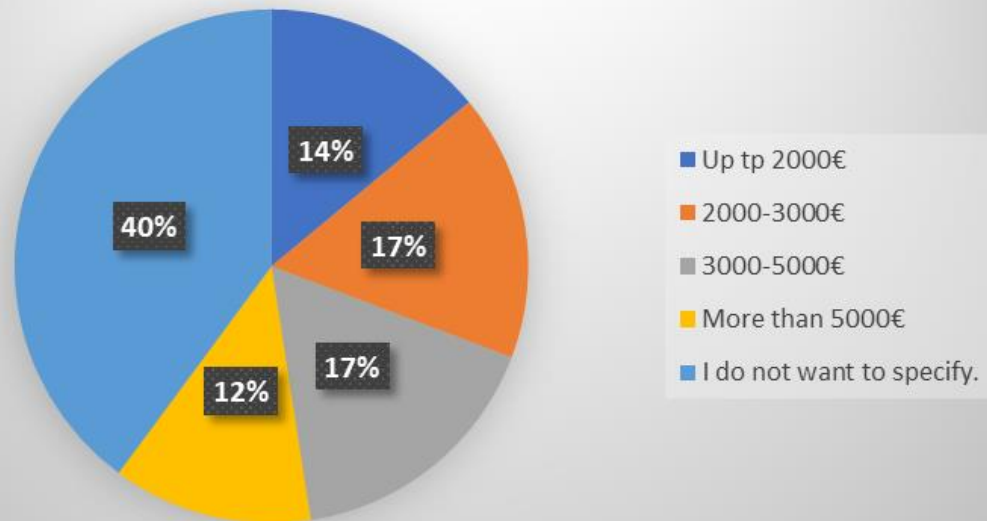
Persons in the household:



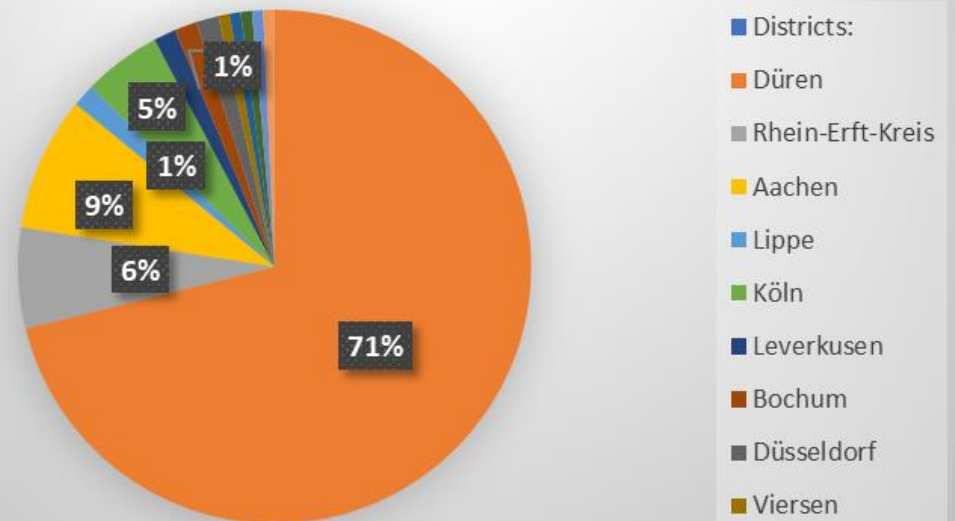
## Employment:



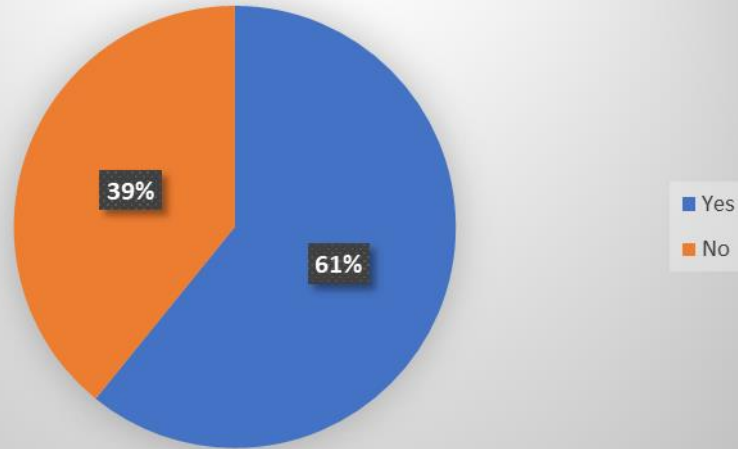
## Monthly net household income:



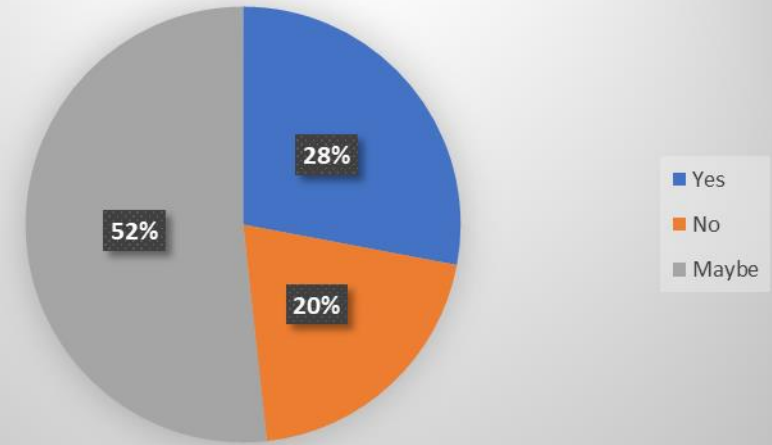
## Districts:



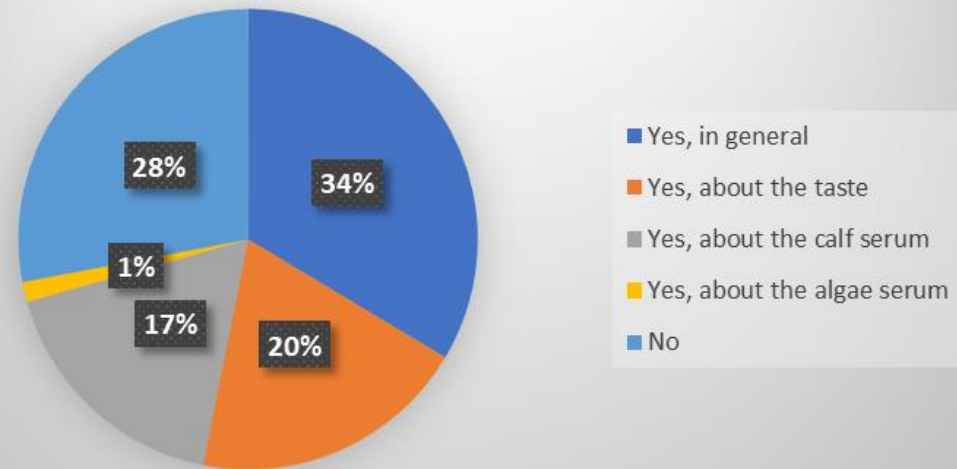
### Have you ever heard about In-vitro-meat?



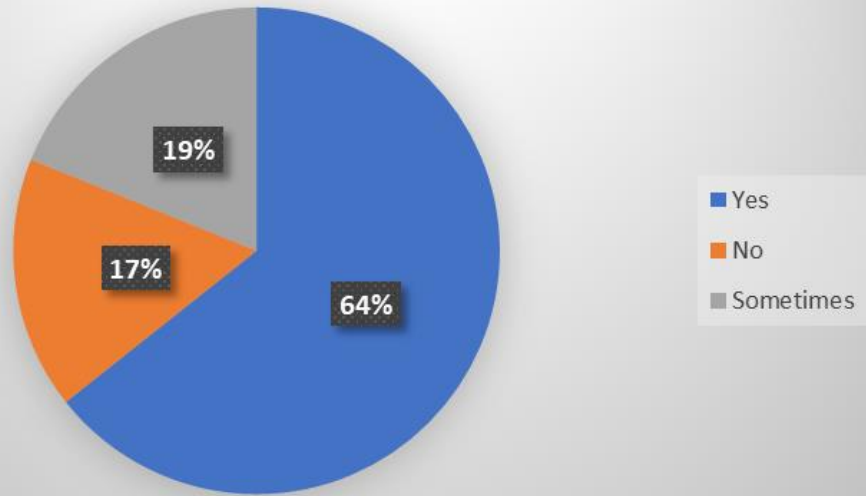
### Would you eat In-vitro-meat?



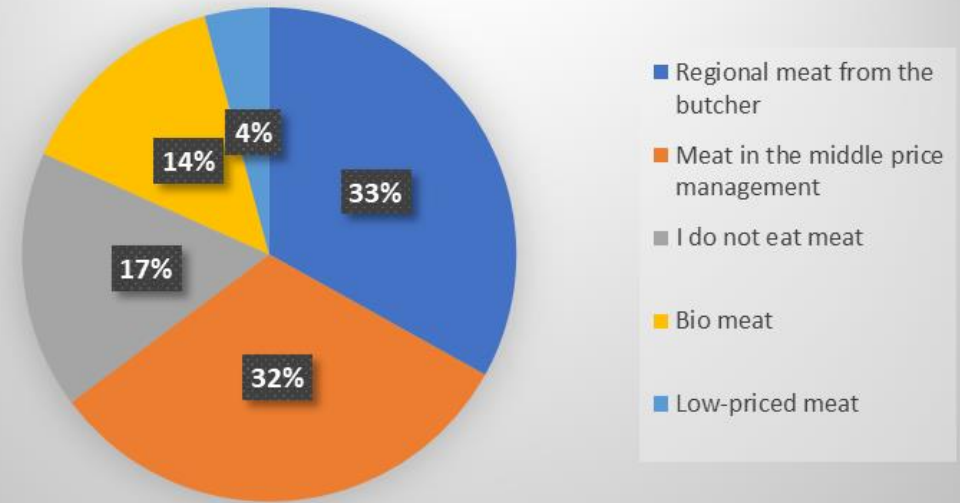
### Do you have any concerns about the consumption?



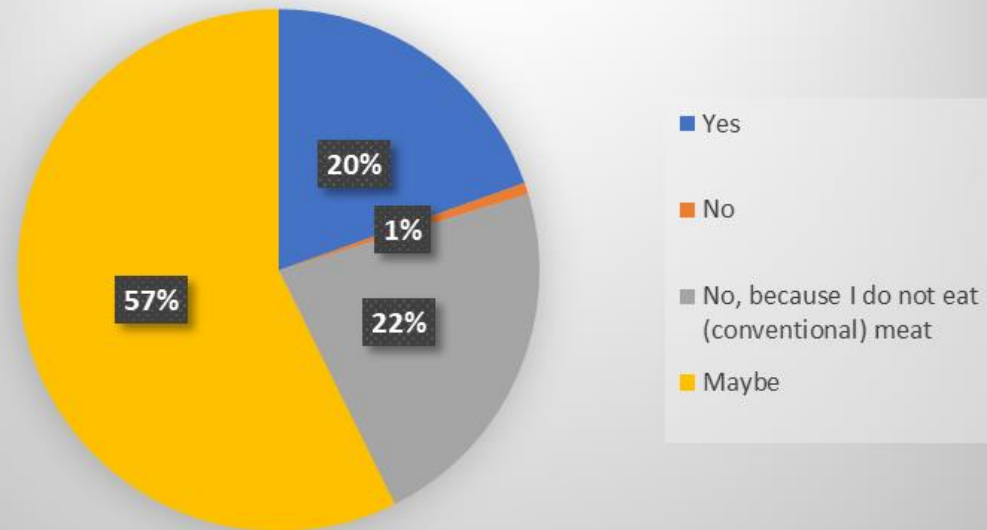
## Do you eat meat or meat products?



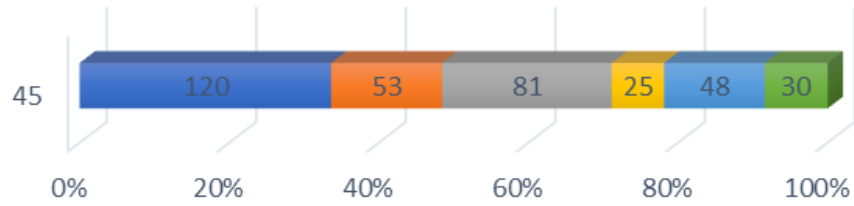
## What kind of meat do you eat mainly?



## Reduction of the conventional consumption?

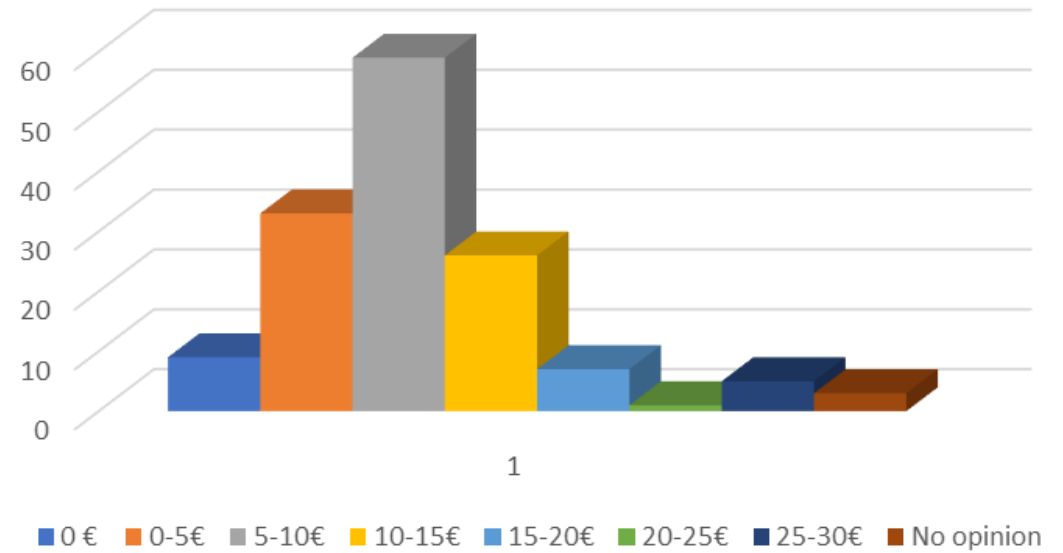


## Attention should be paid to the following:

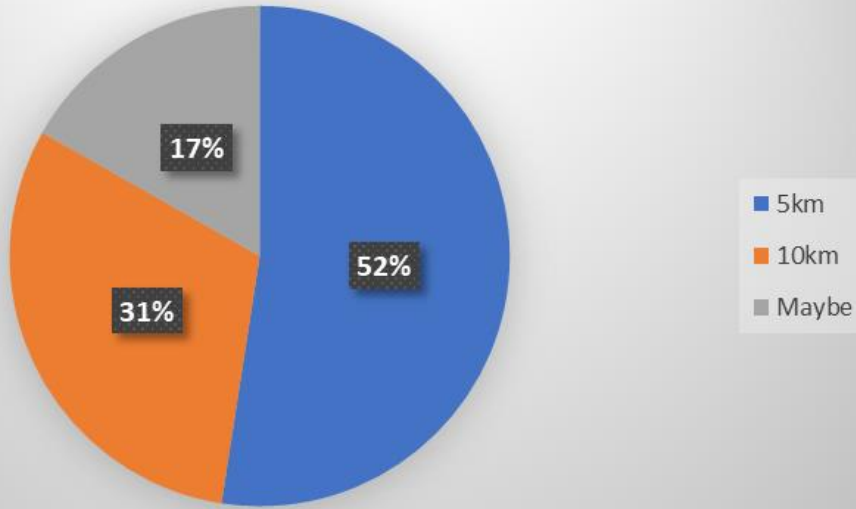


- Mass animal farming should be reduced or eliminated
- Meat should become healthier
- Meat should be produced regionally
- The world's demand for meat should be covered
- The production of bio-meat should continue to be available
- The production of conventional meat should continue to be available

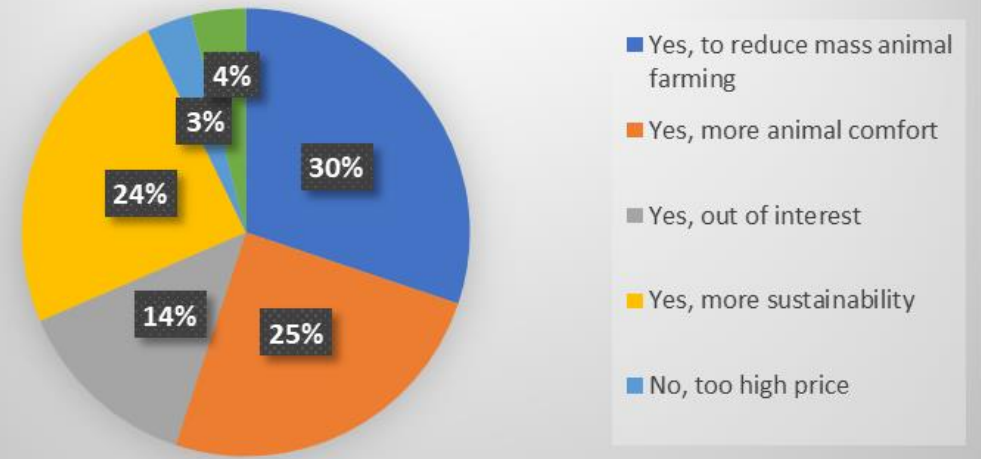
## How much would you pay for 200g?



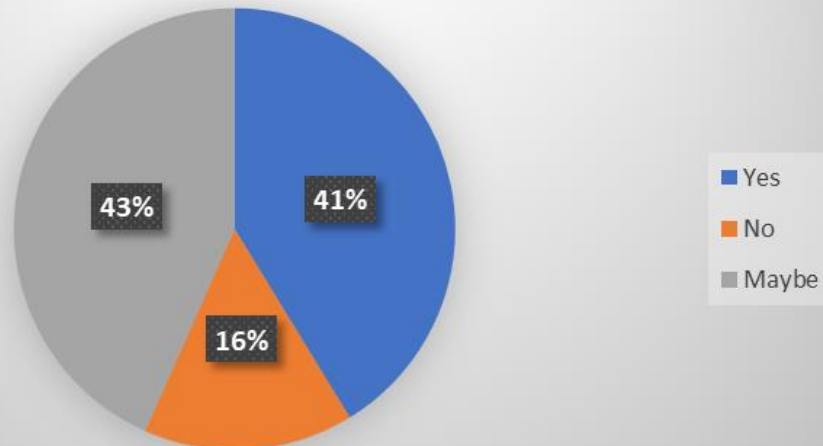
### Distance of the shopping possibility



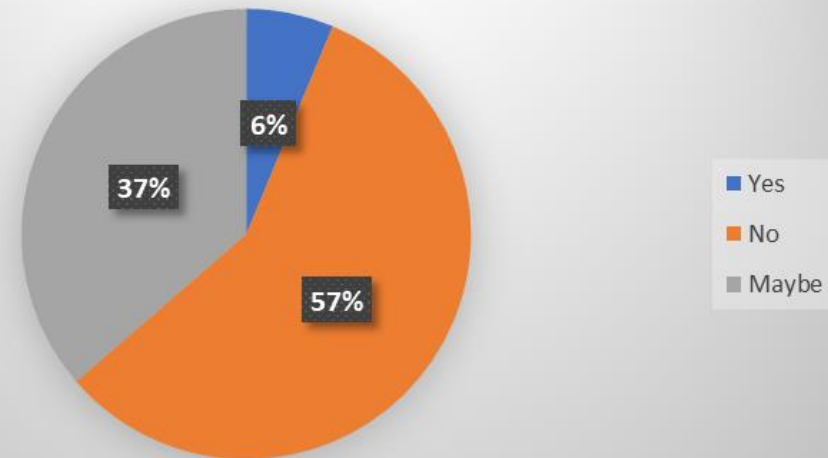
### Why would you choose this alternative or why not?



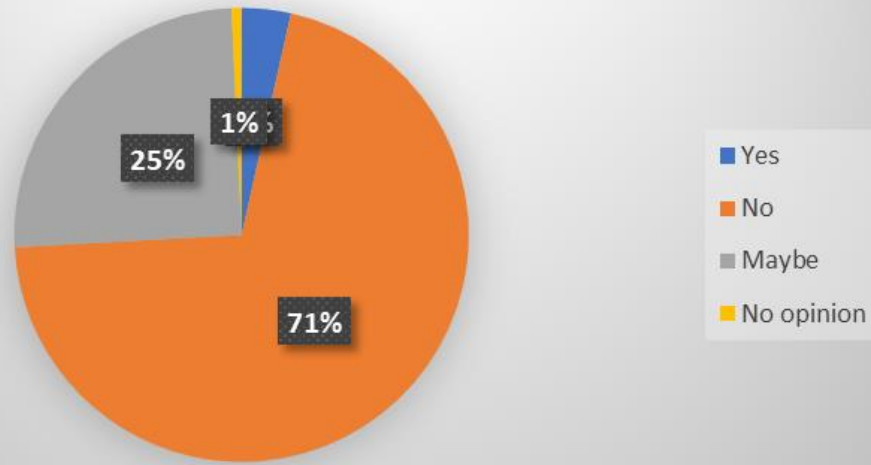
### Consumption of In-vitro-meat using an algae-based sewing solution?



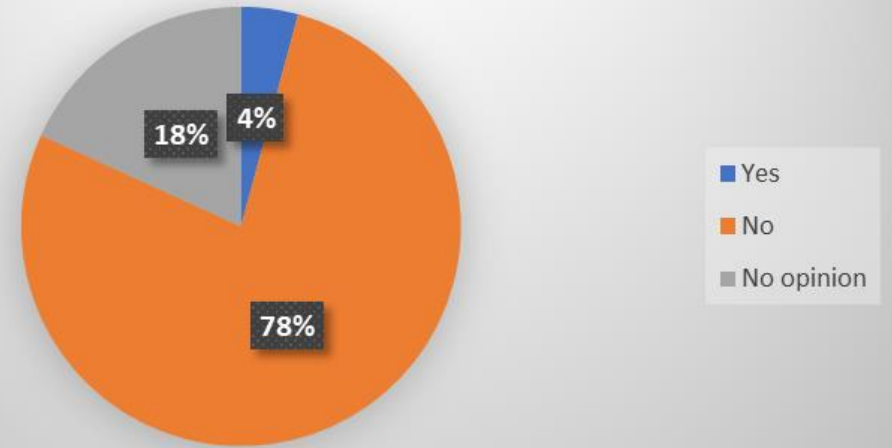
### Consumption of In-vitro-meat using a sewing solution made from fetal calf serum?



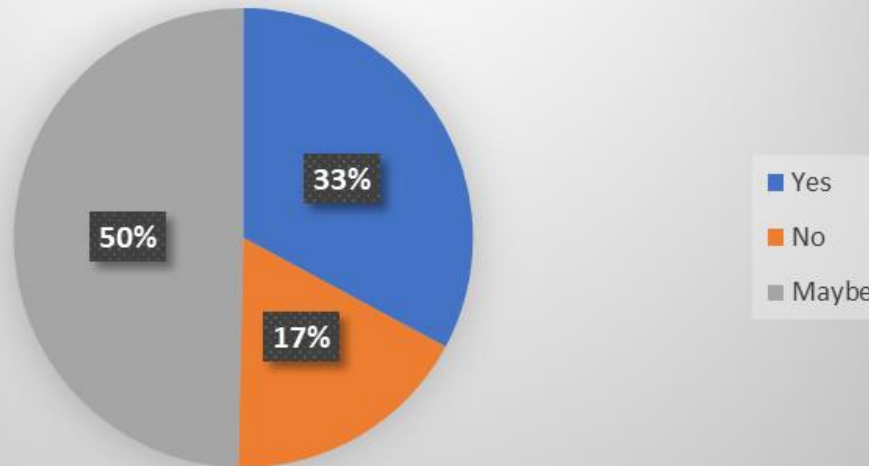
Do you think In-vitro-meat is bought more often than conventional meat?



Would you rather leave the meat production as it is right now?



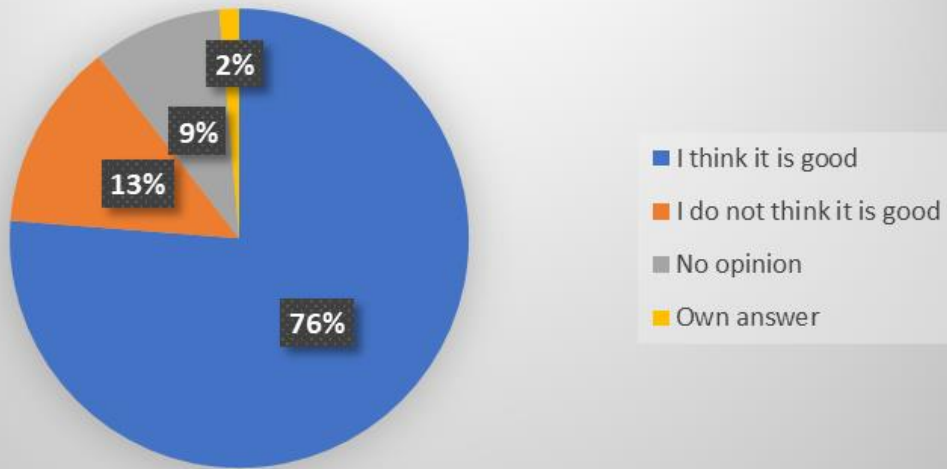
Will you be more involved with the topic after the survey?





# Example Singapore

Opinion on the allowance of In-vitro-meat in other countries:



Own answers:

"Only if it's made with a vegan algae base."

"What was the response to this in Singapore?"

# Conclusion

- Higher acceptance with the algae serum than with the calf serum
- Majority would reduce conventional consumption, mass animal farming & current meat production
- Very good acceptance among the respondents



# Sources

- <https://www.quarks.de/gesundheit/ernaehrung/wann-wir-endlich-fleisch-essen-fuer-das-kein-tier-mehr-leiden-muss/>
- <https://www.rewe.de/ernaehrung/in-vitro-fleisch/>
- <https://www.mdr.de/brisant/ratgeber/fleisch-labor-in-vitro-100.html>
- <https://www.peta.de/themen/laborfleisch/>



Thank you for your  
attention!

Do you have any questions?