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Scottish farming: sustainably feeding the nation

Prof. Jude L. Capper

28th October 2021

Source: Dr. Jude L. Capper, 2021

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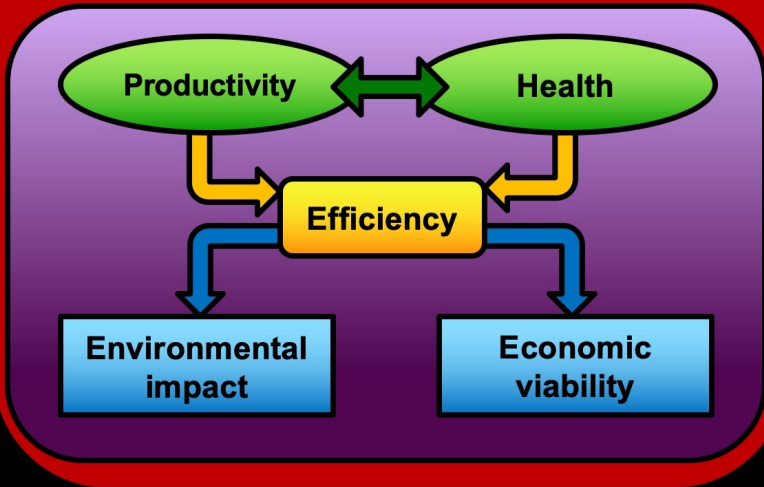
COM

Social acceptability and consumer trust are vital for sustainable livestock production

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Social Acceptability



Sustainability



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Source: Created by Dr. Jude L. Capper, 2020.





B Market share for plant-based meat/dairy alternatives is growing

Tesco sets 300% sales target for plant-based alternatives to meat

In UK first, supermarket's five-year commitment aims to offer more sustainable options



A 300% sales target is impressive... yet the magnitude of the results depends on the (2018) baseline

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Source: Created by Dr. Jude L. Capper, 2020. Screenshot from: The Guardian (2020). <https://www.theguardian.com/business/2020/sep/29/tesco-sets-300-per-cent-sales-target-for-plant-based-alternatives-to-meat>





D
Is the rise in plant-based food sales related to consumer demand?



Lockdown preparations in local food hall indicate that dairy may be a priority for many panic-buyers

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Source: Created and photo by Dr. Jude L. Capper, 20

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Do 582,538 Veganuary participants amount to more than a hill of beans?

**JOIN THE
NEW YEAR'S
REVOLUTION**



- Slightly smaller than the population of Sheffield
- If all participants were UK-based they would comprise <1% of the UK population
- Average of 2,787 per participating country
- 62% of participants already vegan, vegetarian or pescatarian

Source: Created by Dr. Jude L. Capper, 2021. Information from: <https://veganuary.com/>

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Guilt is a primary motivator for people considering going vegetarian or vegan

"I sometimes feel guilty when consuming meat and dairy products"

66% of meat-eaters and flexitarians thinking of giving up meat said "yes" compared to 25% of national population

**No guilt
34%**

**Feel guilty
66%**



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Source: Created by Dr. Jude L. Capper, 2020. Information from: YouGov (2019) Is the future of food flexitarian?
<https://yougov.co.uk/topics/resources/articles-reports/2019/03/18/future-food-flexitarian>

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Animal welfare and human health are major concerns for people giving up animal products

Animal welfare

Healthiness

Environment

Labelling

Economic cost



Source: Created by Dr. Jude L. Capper, 2020. Information from: YouGov (2019) Is the future of food flexitarian?
<https://yougov.co.uk/topics/resources/articles-reports/2019/03/18/future-food-flexitarian>

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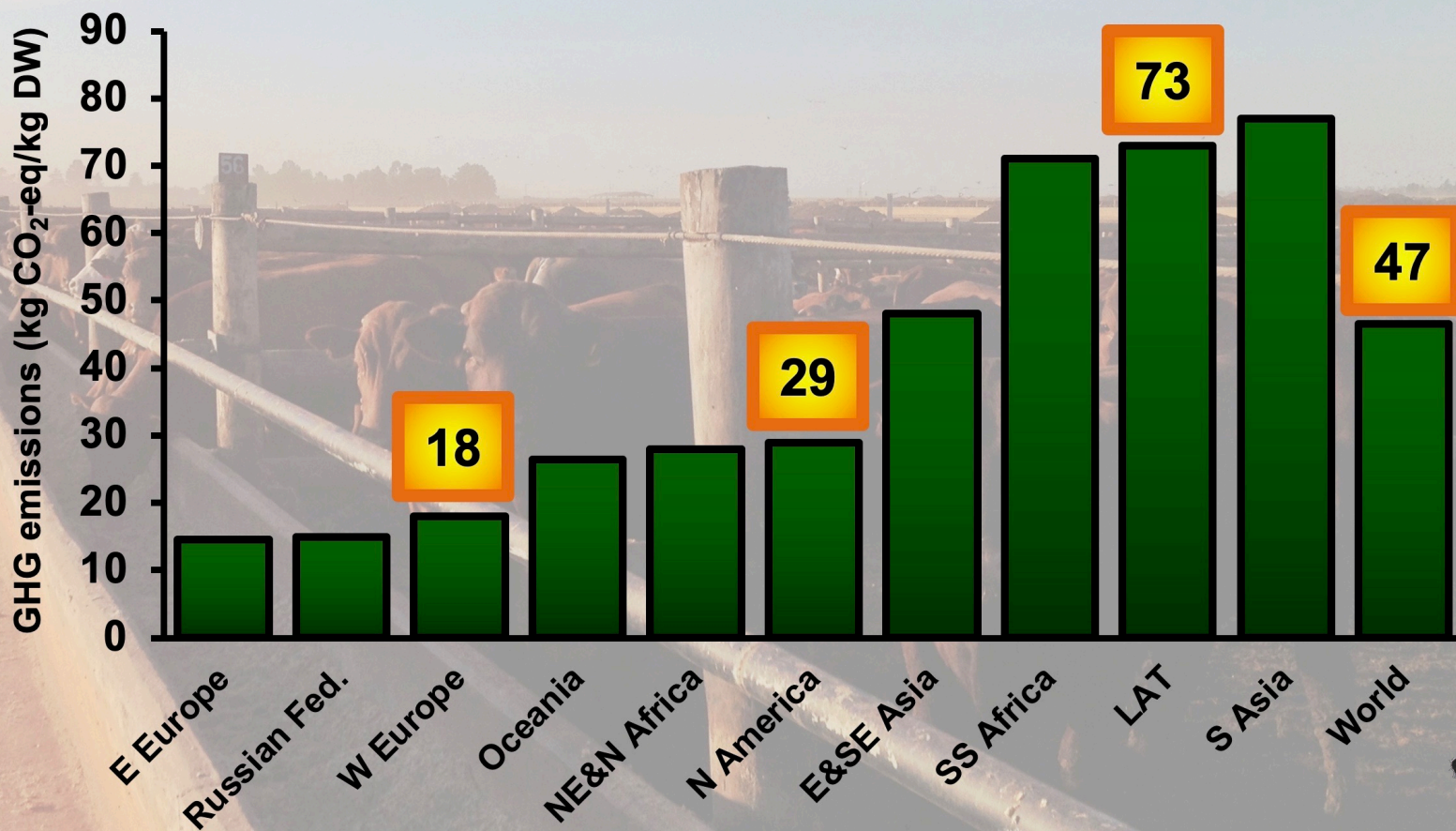
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The carbon footprint of beef production varies across the globe



Source: Created by Dr. Jude L. Capper, 2020; data from Gerber et al. (2013) Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. FAO, Rome, Italy.

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Improving animal productivity reduces the environmental impact of milk and meat



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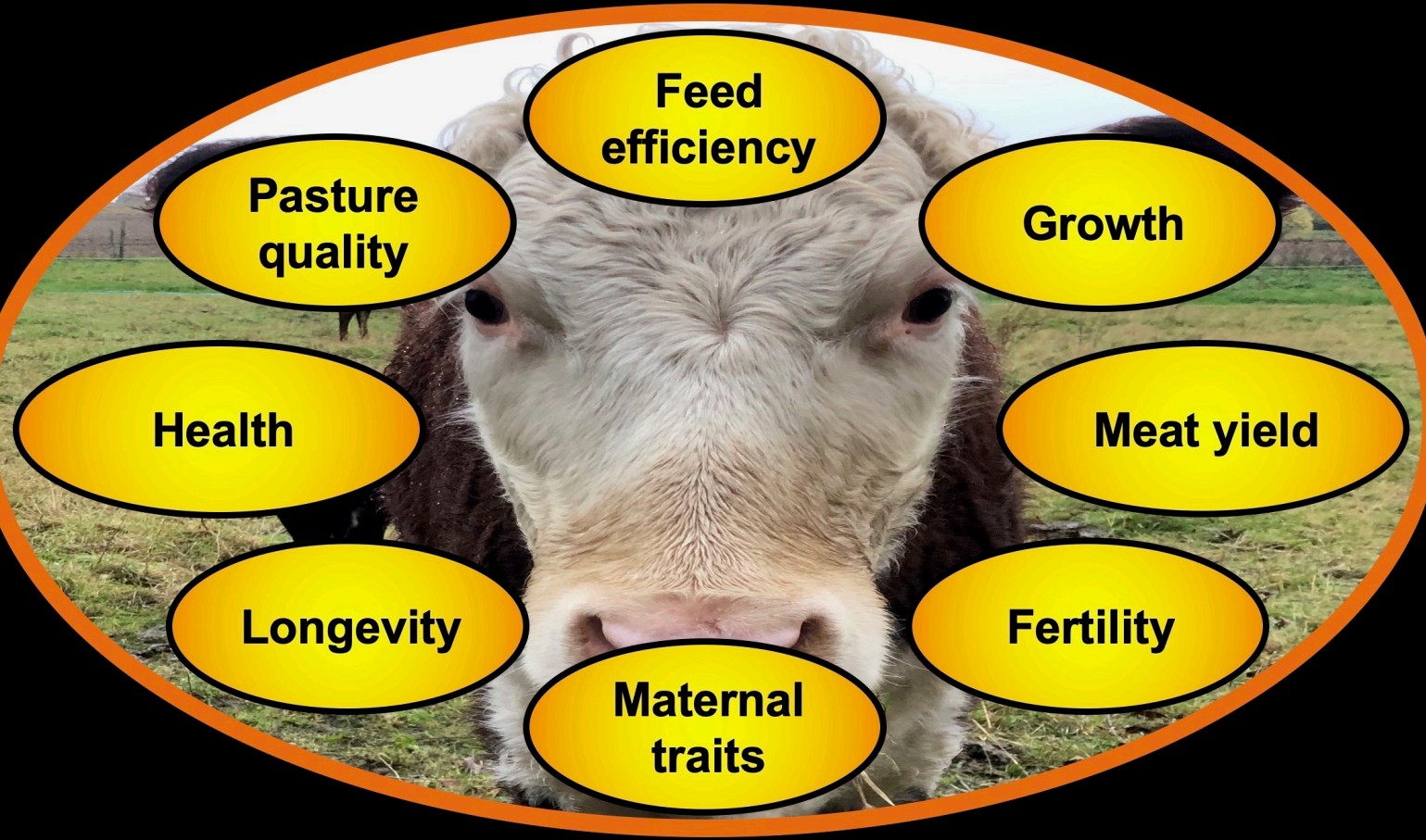
Harper Adams University

Source: Created by Dr. Jude L. Capper, 2020. Data from: Capper, JL. 2015. Sustainability and One Health. In: Cockcroft, P. *Bovine Medicine*. Wiley-Blackwell, Oxford, UK.

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Improving key performance indicators reduces environmental impacts



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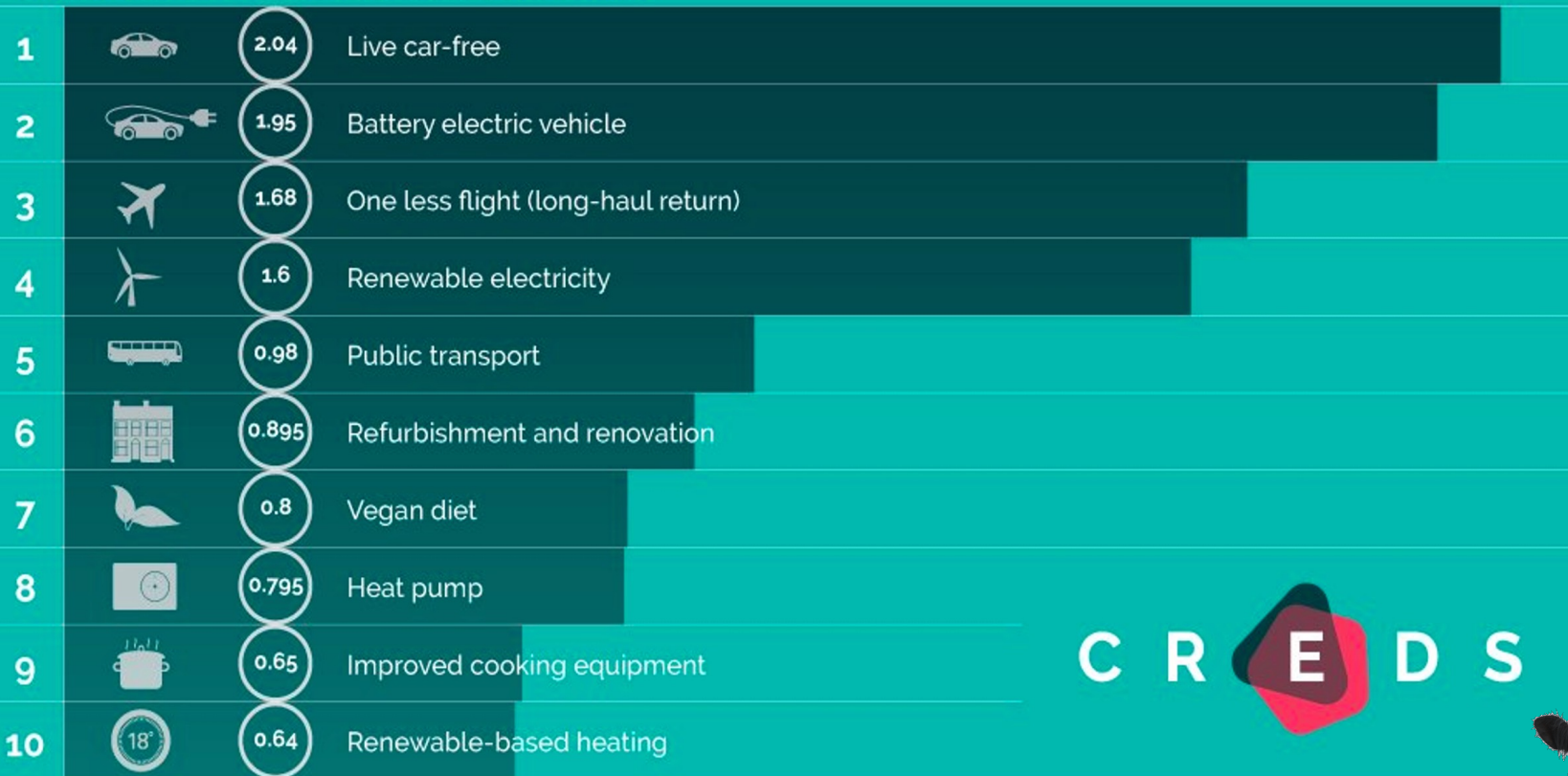
Source: Created by Dr. Jude L. Capper, 2020



CV

New CREDS report puts transport, energy and food choices into context

Top 10 options for reducing your carbon footprint



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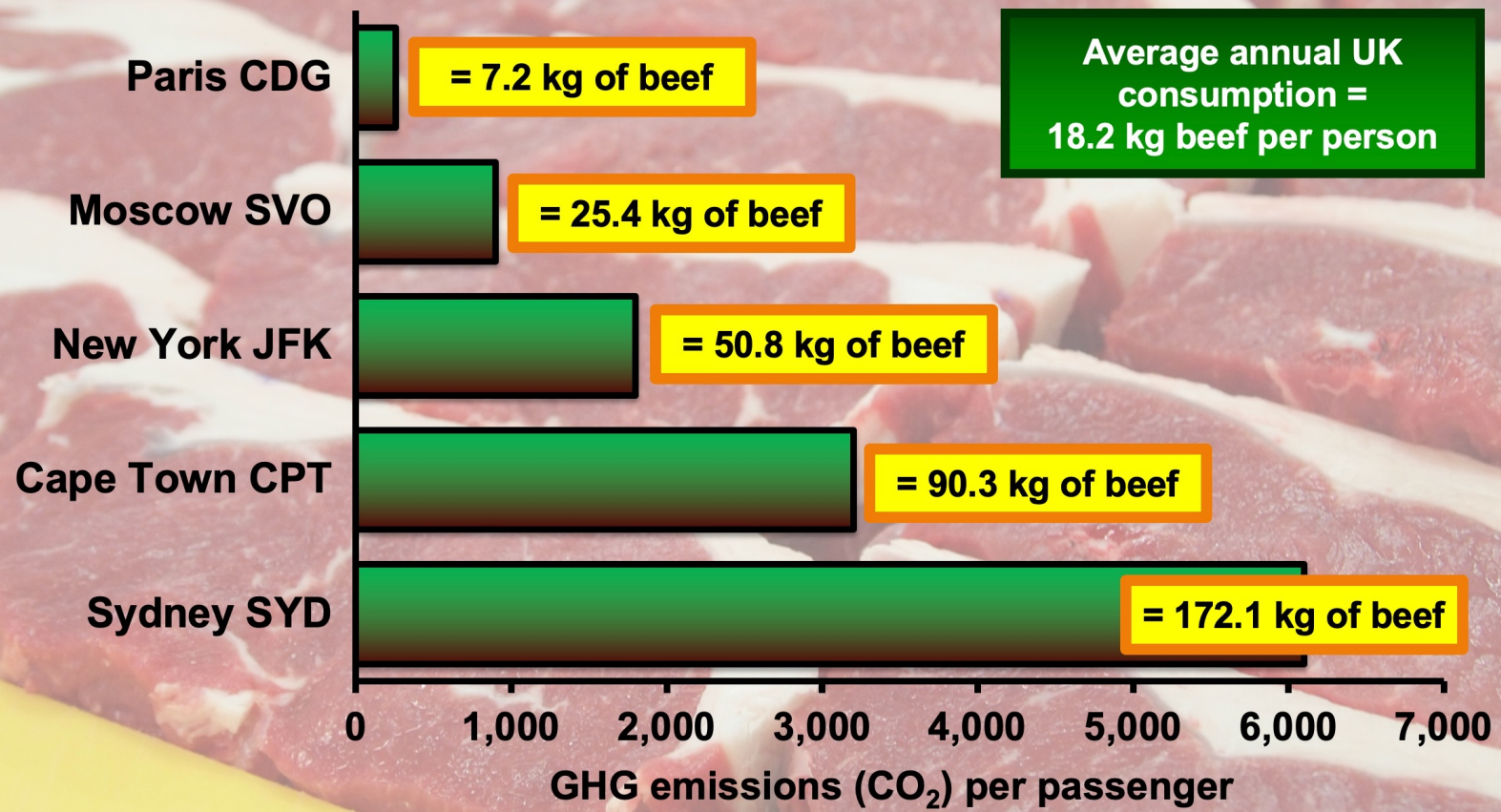
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Source: Created by Dr. Jude L. Capper, 2020. . Infographic adapted from Centre for Research into Energy Demand Solutions (2020). Available at: https://twitter.com/CREDS_UK/status/1262984570175176704?s=20



CV

International flights emit considerable quantities of carbon compared to beef production



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Source: Created by Dr. Jude L. Capper, 2020. Calculations based on GHG emissions flight data from: https://co2.myclimate.org/en/flight_calculators/new, and on a carbon footprint per kg of boneless beef of 35.5 kg CO₂-eq (under GWP100) from AHDB: http://beefandlamb.ahdb.org.uk/wp-content/uploads/2013/05/p_cp_down_to_earth300112.pdf



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Can we grow human food crops everywhere?

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Source: Created by Dr. Jude L. Capper, 2021

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65% of UK land is not suitable for growing arable crops



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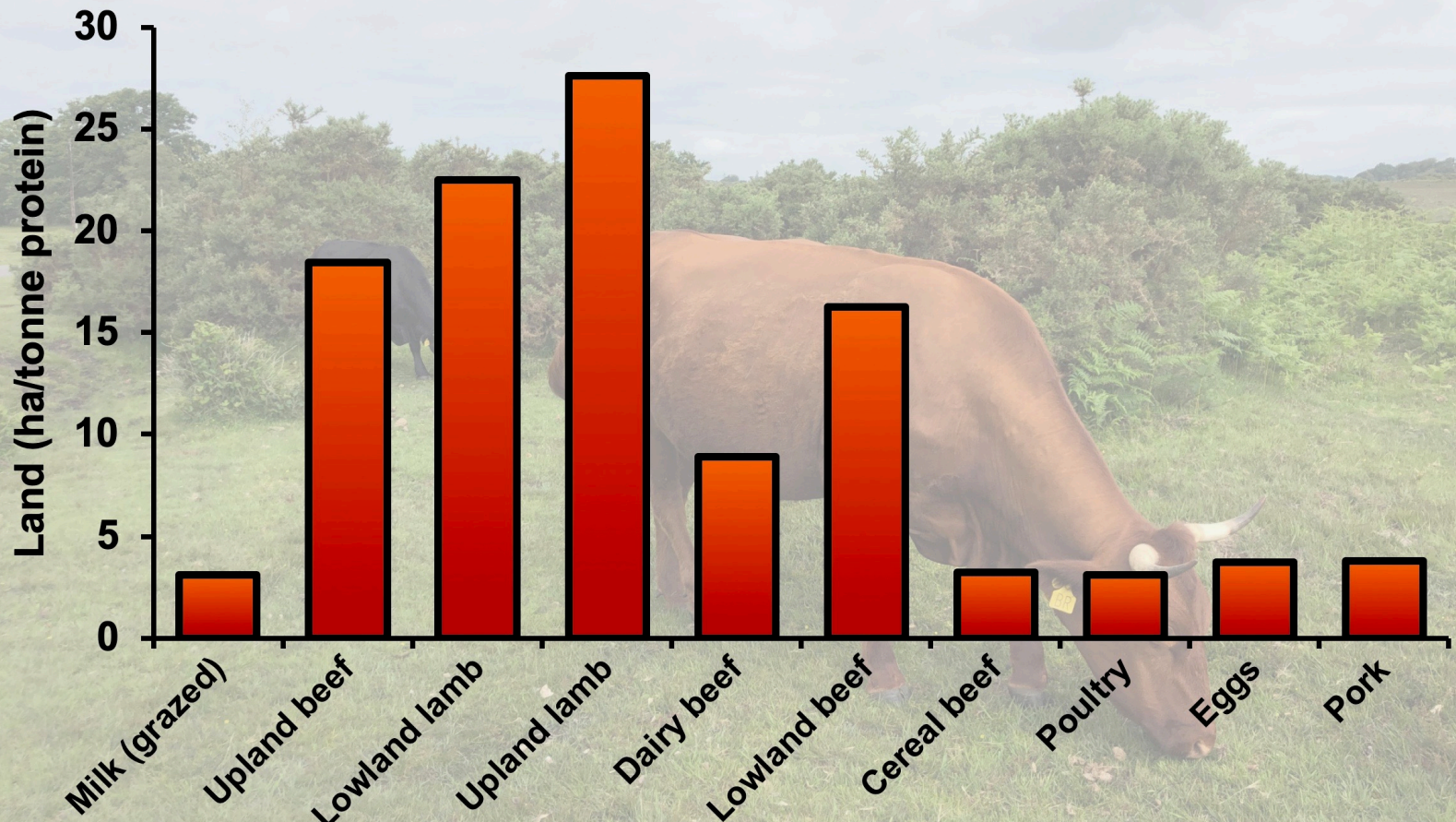
Source: Created by Dr. Jude L. Capper, 2020. Grazing land includes temporary grass on arable land (6% of total), land used for outdoor pigs or non-agricultural purposes not shown (1.7% of total). Data from DEFRA. 2019. Farming statistics - provisional crop areas, yields and livestock populations at 1 June 2019 – United Kingdom.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/837834/structure-jun2019prov-UK-10oct19.pdf



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Livestock systems vary widely in land use



Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.

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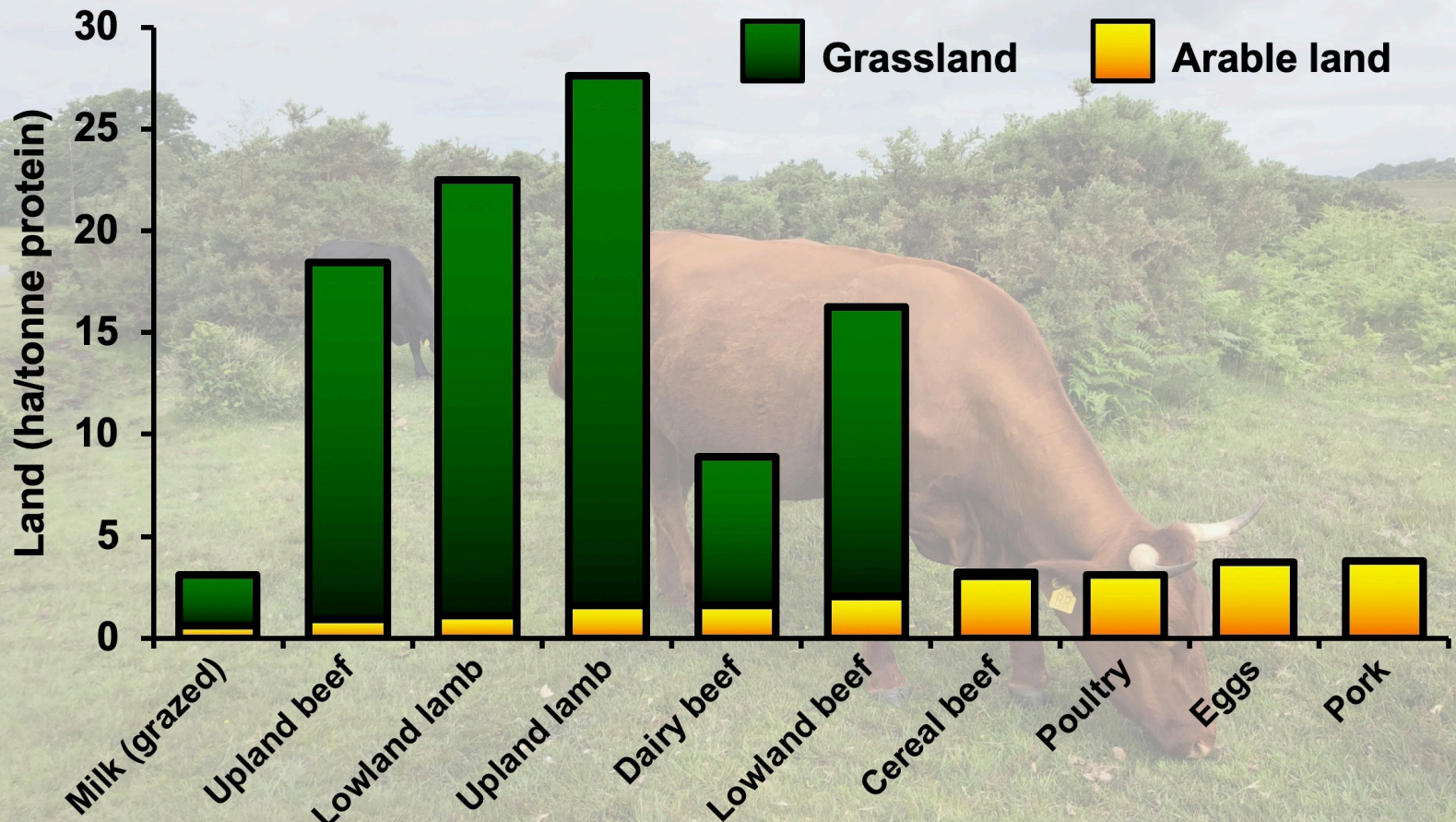
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Livestock systems vary widely in arable and grassland use



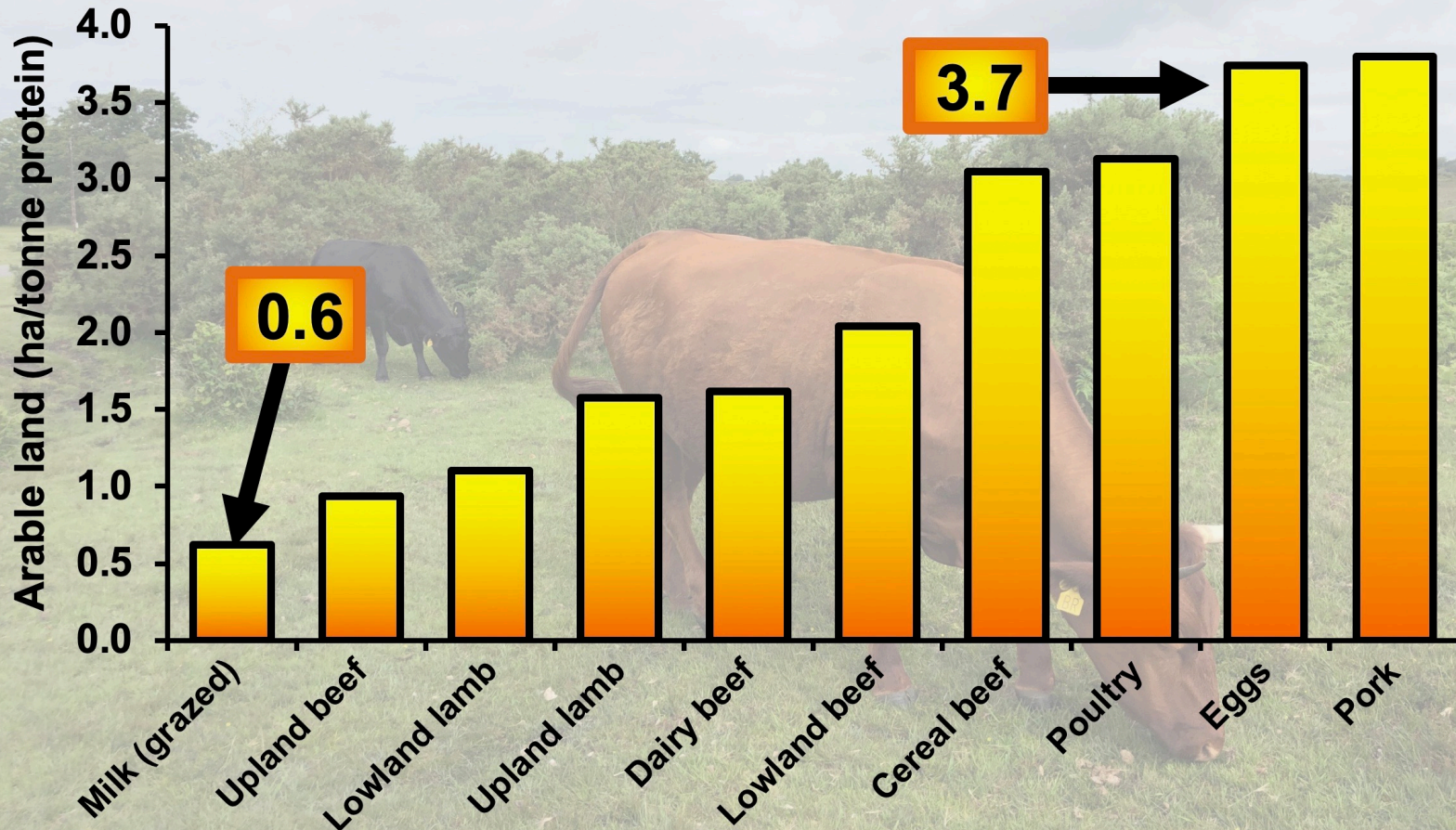
Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.

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Livestock systems vary widely in arable land use



Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson and Lee (2018) Review: Use of human-edible animal feeds by ruminant livestock. *Animal*.

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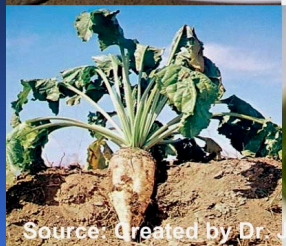
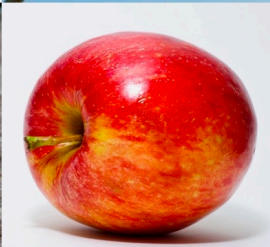
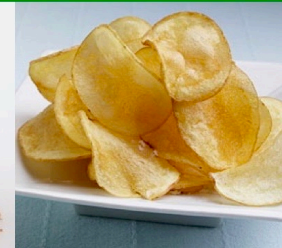
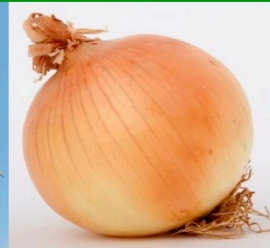


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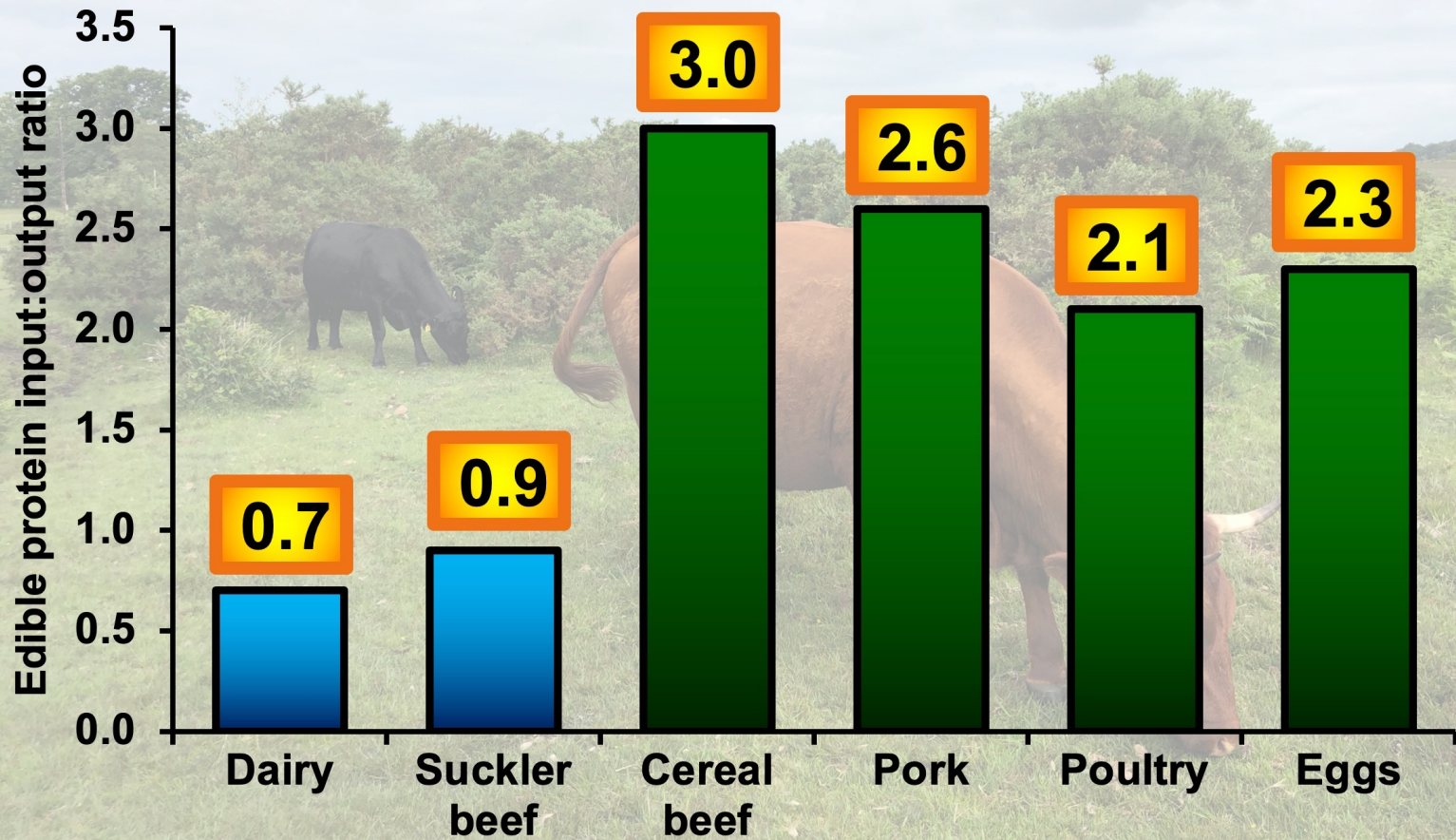
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What do these industries have in common? They all provide by-products fed to animals



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Grazing cattle systems produce more human-edible protein than they consume



Source: Created by Dr. Jude L. Capper, 2020; data from Wilkinson (2011) Re-defining efficiency of feed use by livestock. *Animal*.

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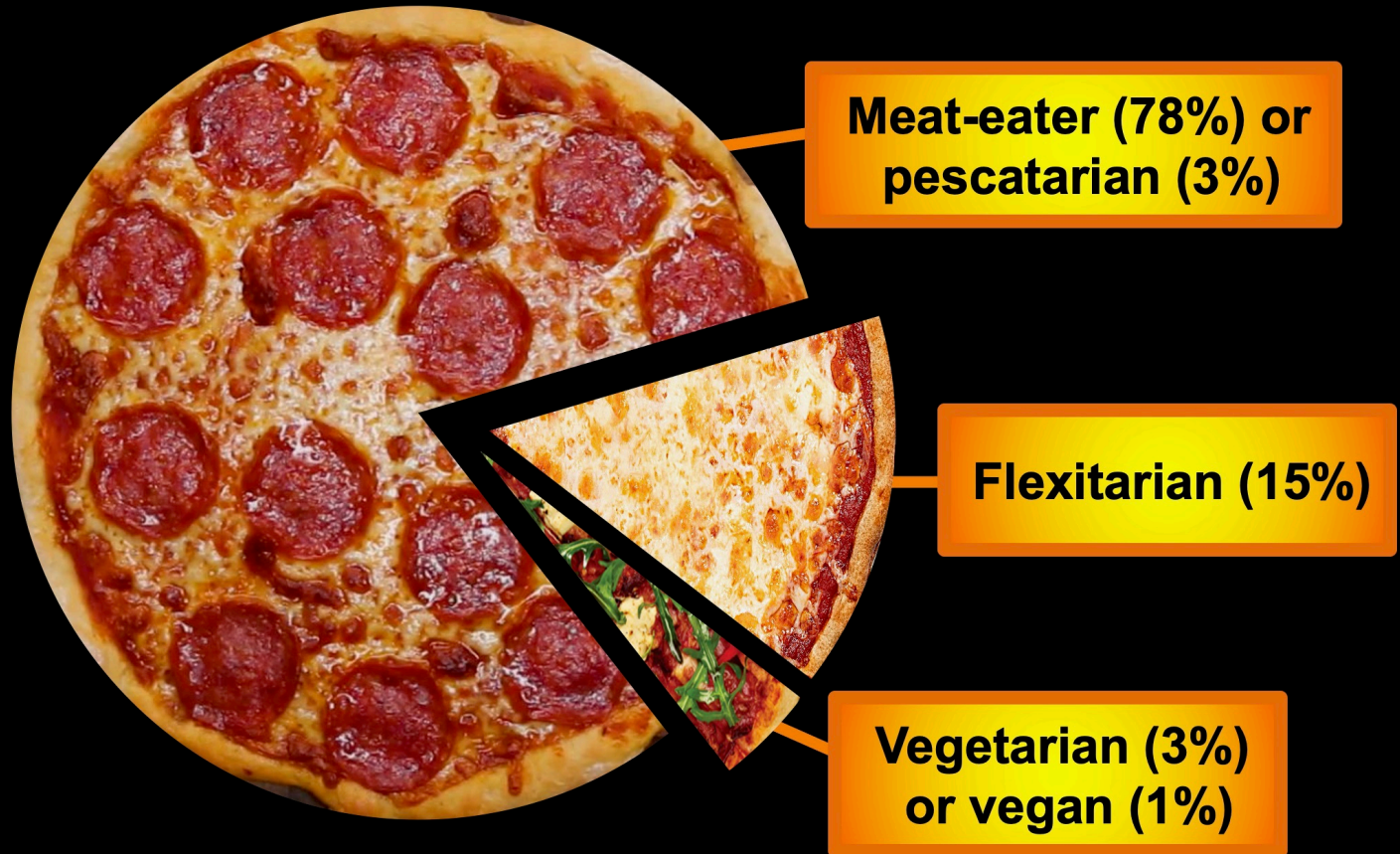


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The future probably isn't vegan, but it may be flexitarian?



Source: Created by Dr. Jude L. Capper, 2020. Data from: YouGov (2019) Is the future of food flexitarian?
<https://yougov.co.uk/topics/resources/articles-reports/2019/03/18/future-food-flexitarian> Question: "Which, if any, of these best describes your usual eating habits?" Results adjusted for people who answered "don't know" (3%) or "other" (3%).

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5 easy tips for positive communication

Share your values

Stay positive, polite and personal

Keep it short, simple and see-through

Focus on the important

Know when to walk away

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Source: Created by Dr. Jude L. Capper, 2019. Adapted from: Capper and Yancey. 2015. Communicating Animal Science to the General Public. *Animal Frontiers*.



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You don't have to be the biggest,
you do need to do your best

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Source: Created by Dr. Jude L. Capper, 2021.

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Thank you!

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<http://bovidiva.com/presentationlinks>

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Questions?



Source: Created by Dr. Jude L. Capper, 2020. Cartoon from: <http://snipurl.com/methanecartoon>