

**Dr. Jude Capper**

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# A sustainable food supply - the role of animal health

**Dr. Jude L. Capper**

*7<sup>th</sup> October 2021*

Source: Dr. Jude L. Capper, 2021

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# Impacts of disease on maintaining livestock production

Reduced milk/meat yield = need more animals

Increased mortality = need more animals

Failure to wean = need more animals

Failure to conceive = need more time

Reduced growth rates = need more time

Greater resource use  
Higher economic cost

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Source: Created by Dr. Jude L. Capper, 2020. More information available at: <https://www.msd-animal-health-hub.co.uk/TimeToVaccinate>





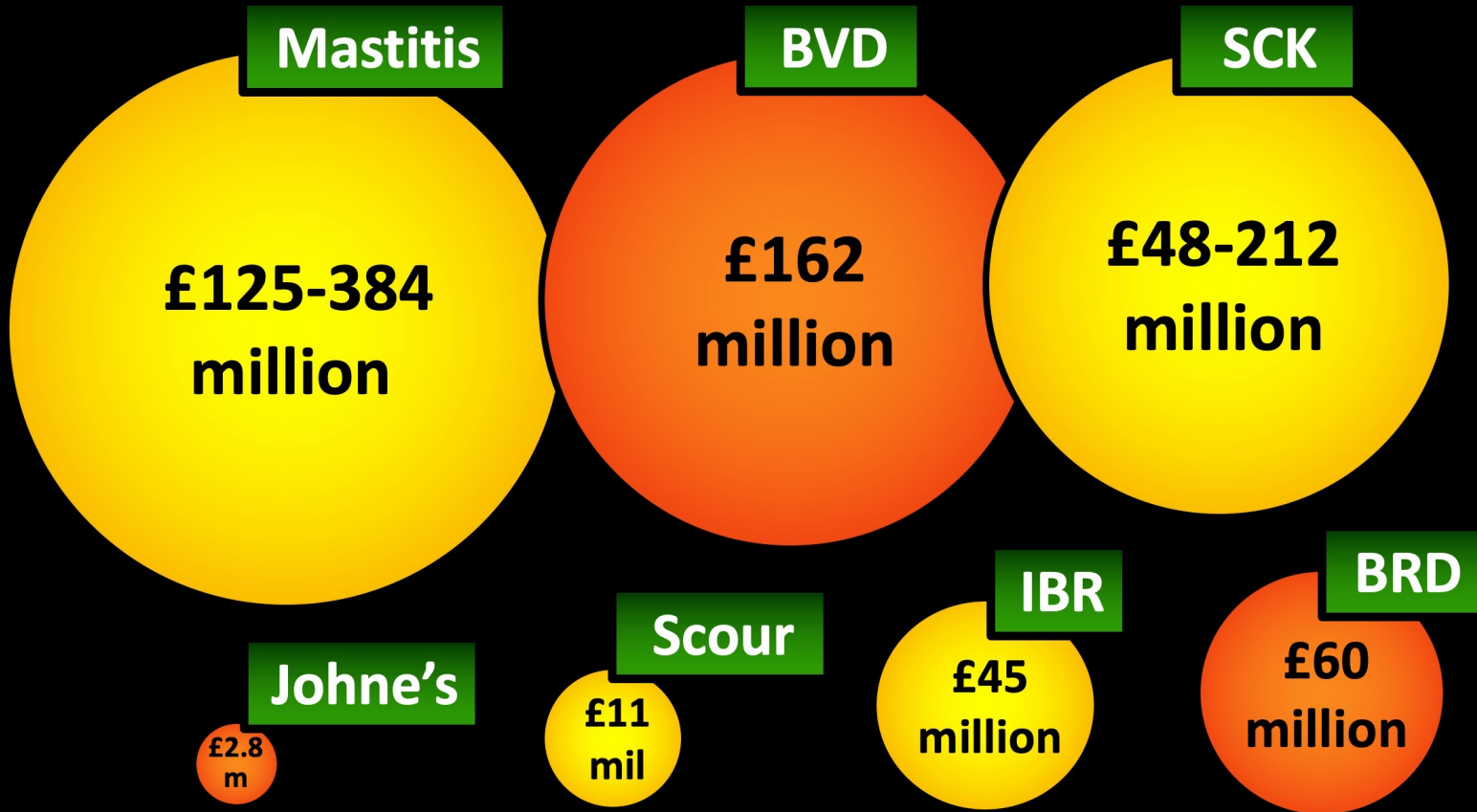
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# Impacts of cattle disease on economic cost at the industry level

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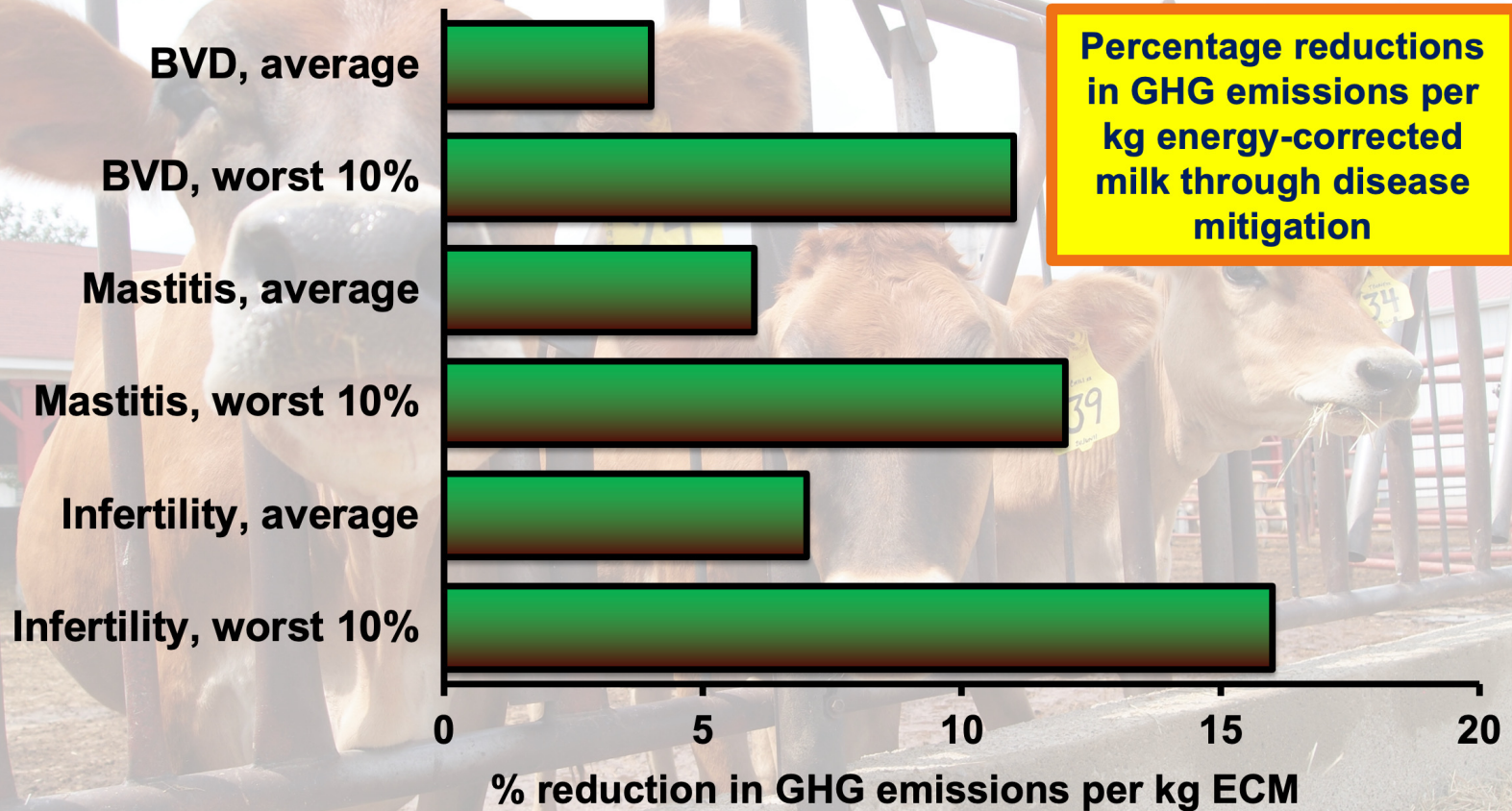


Source: Created by Dr. Jude L. Capper, 2020. More information available at: <https://www.msd-animal-health-hub.co.uk/TimeToVaccinate>



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# GHG emissions could be cut significantly by mitigating dairy diseases - UK



Source: Created by Dr. Jude L. Capper, 2021. Data from: Statham et al. 2021. Dairy Cattle Health and Greenhouse Gas Emissions Pilot Study: Chile, Kenya and the UK. Available from: <https://dairysustainabilityframework.org/wp-content/uploads/2020/10/Dairy-Cattle-Health-and-GHG-Emissions-Pilot-Study-Report.pdf>

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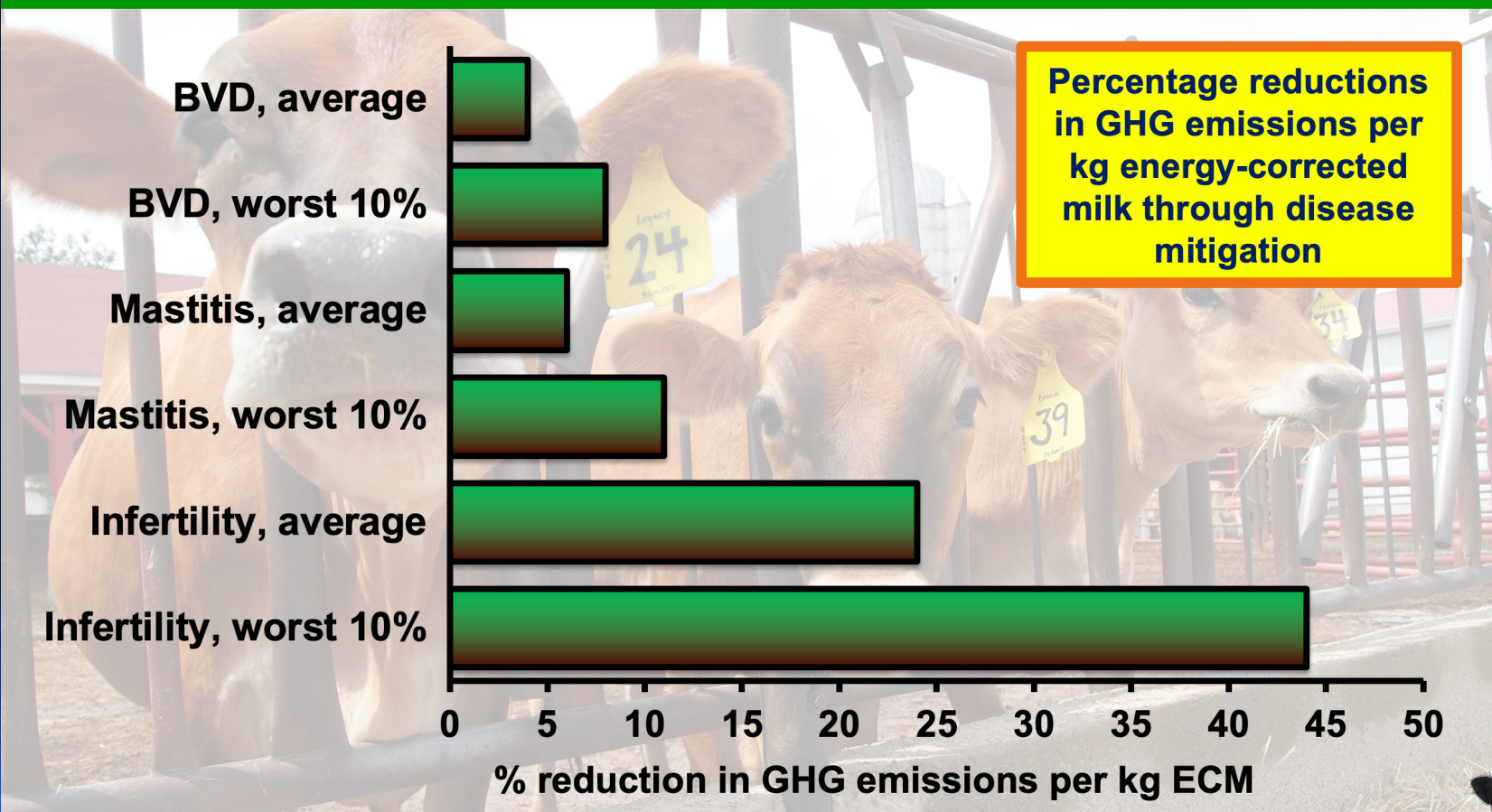
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# GHG emissions could be cut significantly by mitigating dairy diseases - Kenya



Source: Created by Dr. Jude L. Capper, 2021. Data from: Statham et al. 2021. Dairy Cattle Health and Greenhouse Gas Emissions Pilot Study: Chile, Kenya and the UK. Available from: <https://dairysustainabilityframework.org/wp-content/uploads/2020/10/Dairy-Cattle-Health-and-GHG-Emissions-Pilot-Study-Report.pdf>

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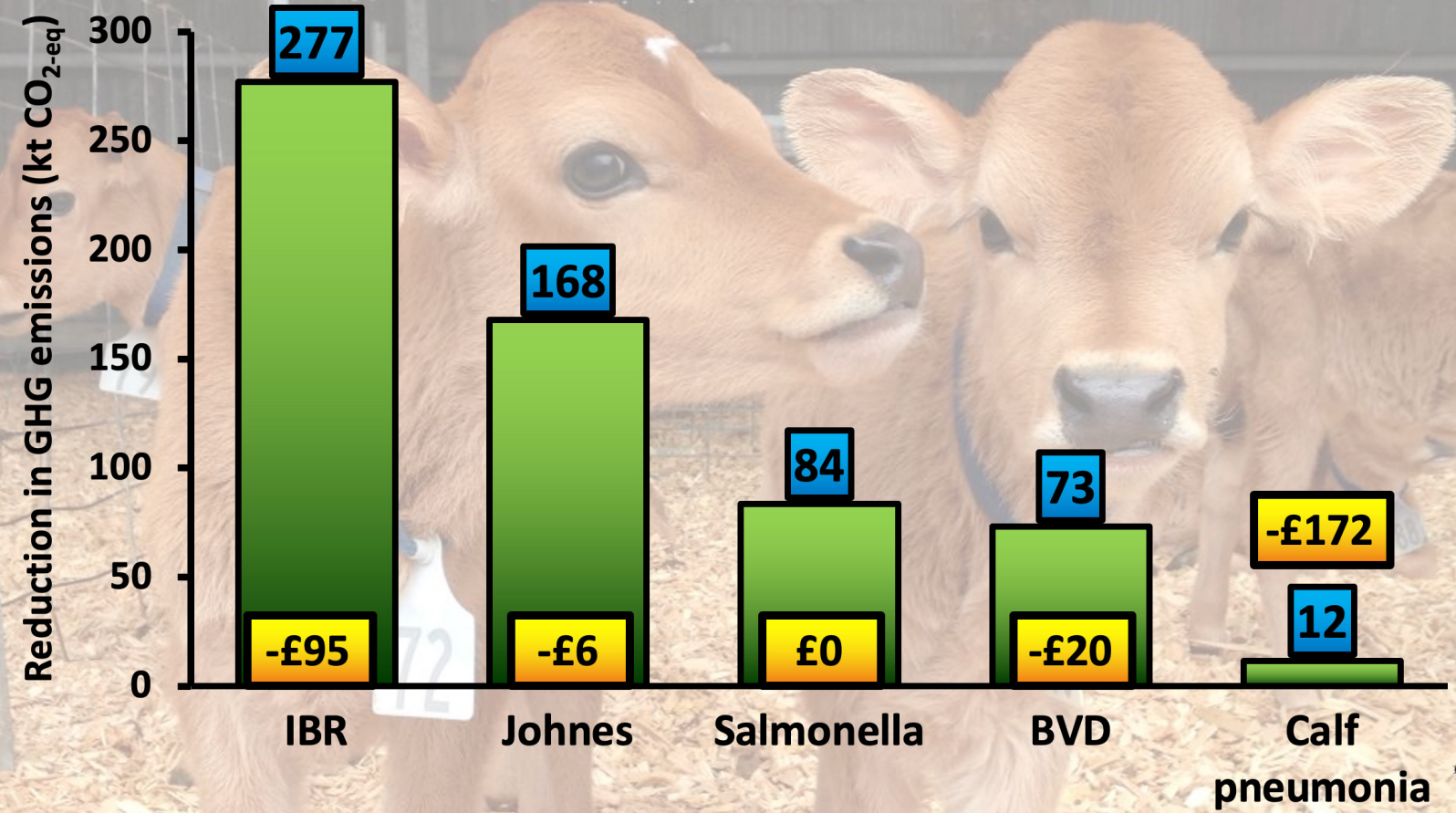
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# Vaccination against endemic disease reduces GHG emissions and is cost-effective



Source: Created by Dr. Jude L. Capper, 2020. Data from: ADAS (2015) Study to Model the Impact of Controlling Endemic Cattle Diseases and Conditions on National Cattle Productivity, Agricultural Performance and Greenhouse Gas Emissions. ADAS UK Ltd, Helsby, UK.

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What are the milk, meat and greenhouse gas implications of global dairy cow mortality?



Annual milk yield

4,500  
kg

Milk lost if cow dies

8,537  
kg

Meat lost if cow dies

430  
kg CW

Extra GHG emissions

3,751  
kg  
CO<sub>2</sub>e

Source: Created by Dr. Jude L. Capper, 2021. Calculated as an example based on a 4,500 kg annual milk yield, 26 mo age at first calving, 14 mo calving interval, 248 kg carcass weight, 0.69 live calves born/yr, 0.50 calves reared for beef, and average of 1,731 kg CO<sub>2</sub>e GHG emissions per heifer/yr.

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# Livestock disease = food waste

African swine fever spread into China and East Asia



100-150 million pigs died (30% of Chinese herd)



17-38% increase in world pork prices



Pigmeat losses would have supplied 550-824 million people with their annual pork demand



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Source: Created by Dr. Jude L. Capper, 2021. Economic data from Mason-D'Croz et al. 2020. *Nature Food* 1:221-228. Pigmeat data – J. Capper.

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## How can we improve?



Take a whole-herd, holistic approach



Use on-farm medicines responsibly



Use vaccination where appropriate



Record and benchmark health data



Record performance and economic impacts



Communicate dedication to livestock health

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Source: Created by Dr. Jude L. Capper, 2020. More information available at: <https://www.msd-animal-health-hub.co.uk/TimeToVaccinate>

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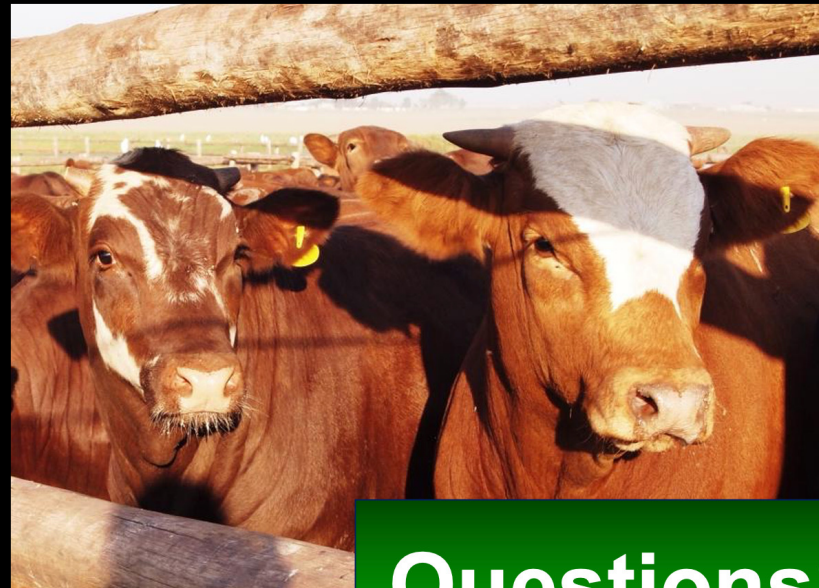
**Thank you!**

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**<http://bovidiva.com/presentationlinks>**

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"No more bean dip for me, dear. I'm trying to reduce my carbon footprint."



**Questions?**



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Source: Created by Dr. Jude L. Capper, 2021. Cartoon from: <http://RubesCartoons.com>