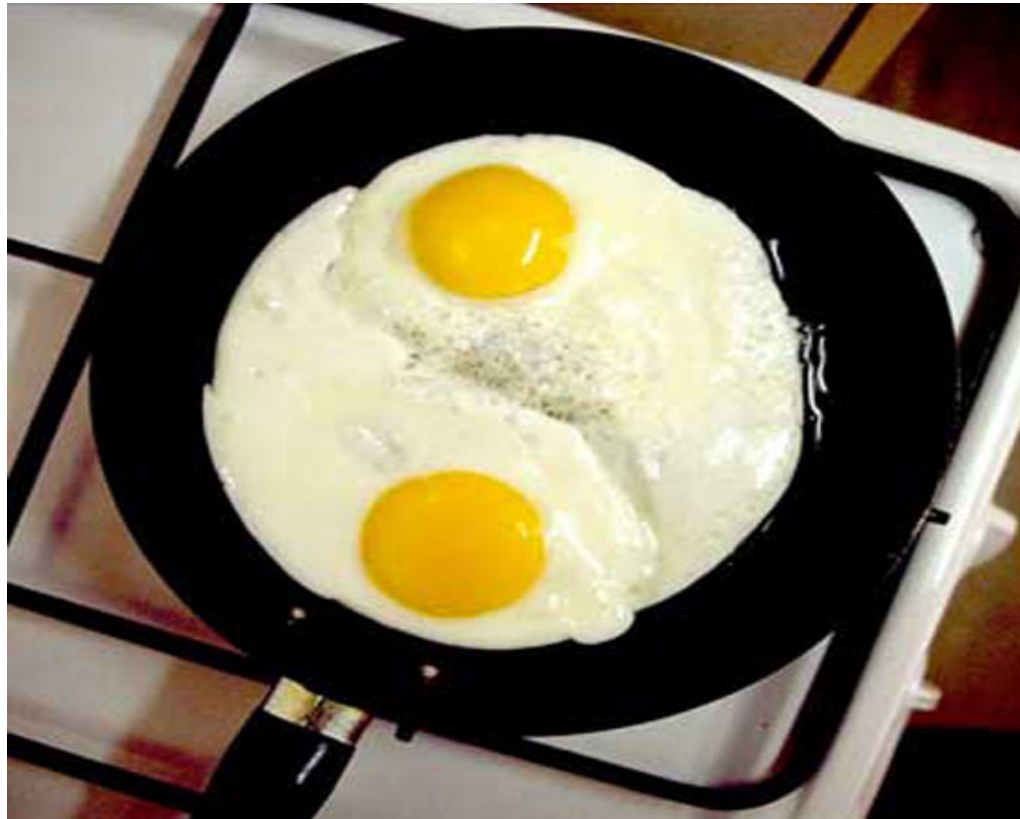


# Eggs at ASU: Sustainability concerns, sourcing options, and recommendations



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# Priority Sustainability Concern

- Primary Concern: Hen Welfare
  - Indicators: Mortality rate, air quality, exposure to disease vectors (contact with waste)
- Secondary concerns:
  - Worker health
  - Energy Use
  - Waste Management (manure and spent hens)
  - Food availability and affordability
  - Food safety



# Hen Welfare Indicators

Indicators	Conventional Cage	Furnished Cage			Non-cage (Barn)		Outdoor (Free-range)
		Small	Medium	Large	Single Level	Multiple Levels	
Mortality (%)	Good	Medium	Medium	Good (S)	Poor	Poor	Poor
Mortality from feather pecking and cannibalism	Good	Medium	Medium	Medium	Medium	Medium	Medium
Bone strength and fractures	Poor (†)	Poor (*)	Poor (*)	Poor (*)	Medium (‡)	Medium (‡)	Medium (‡)
Exposure to disease vectors (e.g., wild birds)	Good	Good	Good	Good	Medium	Medium	Poor
Internal parasites (e.g., coccidia, roundworms)	Good	Good	Good	Good	Poor	Poor	Poor
External parasites	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Bumblefoot	Good	Medium	Medium	Medium	Poor	Poor	Poor
Feather loss	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Hen hysteria and piling/smothering	Good	Good	Good	Good	Poor	Poor	Medium
Risk of predation	Good	Good	Good	Good	Good	Good	Poor
Level of egg production and cleanliness	Good	Good	Good	Good	Medium	Medium	Poor
Use of nest boxes	Poor	Good	Good	Good	Good	Good	Insuff Data
Use of perches	Poor	Medium	Medium	Medium	Medium	Medium	Medium
Foraging behavior	Medium	Medium	Medium	Medium	Good	Good	Good
Dustbathing behavior	Poor	Medium	Medium	Medium	Good	Good	Good
Air quality (e.g., dust, ammonia)	Good	Variable (¥)	Variable (¥)	Variable (¥)	Poor	Poor	Good

S = Recent unpublished data indicate lower mortality may be achievable in large furnished cages

† = Reduced bone strength, fractures when birds are caught

\* = bones stronger from perch use but increased incidence of deformation of the keel

‡ = More fractures during lay despite stronger bones







¥ = Variable, depending on whether loose litter is dispensed; litter presents challenges for maintaining air quality

How well welfare measures are met:

Good	Medium	Poor	Insuff Data
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# Labeling standards

	Wire cages prohibited	Space required per hen:	Access to outdoor space required	Exposure to daylight required	Perches and dust-bathing required?	De-beaking prohibited	Destruction of male chicks prohibited
	No	0.5 sq. ft.	No	No	No	No	No
	Yes	1.2 sq. ft.	No	No	No	No	No
	Yes	1.5 sq. ft.	No	No	Yes	No	No
	Yes	Not specified	Yes	Yes	No	No	No
	Yes	minimum of 7 inches for perches required	Steps 1 and 2 - not required, steps 3-5 required	No, but "birds should have periods of light and darkness" using artificial light.	Yes	Yes	Not specified
	Yes	1.8 sq. ft. for indoor roosting spaces	Yes: >4 sq. ft. of green pasture per hen	Yes	Yes	Yes	No



# Currently at ASU...

- Food budget for one month at typical dining hall: 15% on Dairy (this includes eggs).
- Cage-free eggs offered as an option in all residential dining halls.
- At Barrett Dining Hall, eggs are being purchased from Hickman's Family Farms



# Primary options at ASU

Conventional Battery Cages



Cage-Free



Other options researched and considered: Organic and free range



# Recommendations to ASU and ARAMARK

- Currently no third party certification for concerns such as air quality, labor conditions, mortality rate, feed/ energy efficiency, re-use of waste (i.e. composting).
- We encourage ARAMARK to buy from producers that are transparent in their processes.
  - We feel strongly that producer transparency is a key sustainability criteria and will typically produce a quality product
- A transparent producer will be able to tell you:
  - Number of recalls performed
  - Conditions their hens live in
    - will likely be hesitant to provide a tour of their hen facilities due to their concern for the biosecurity of the hens
  - Where their chicks are sourced
  - Euthanasia process
  - Waste Management



# Student Survey

- At the farmer's market on April 19<sup>th</sup>, Students were presented with the indicator graph shown earlier in this presentation.
- Students were asked to read the information presented and asked:

After reviewing the information presented, which eggs would you prefer to be served at ASU?

- Of 34 responses, 85% of students preferred Conventional Battery Cage Egg Production.



# Ideal Sustainability Goals

Reduced consumption of eggs, purchased from pastured raised hens from a polyculture farm

- Benefits:
- Hens practice natural behaviors
- Higher nutritional content of eggs
- Waste management integrated into a zero-waste system
- Reduced need for animal-only feed (hens forage for food)
- Reduced energy consumption

