A Field Experiment on Consumer Willingness to Accept Milk from Cloned Cows

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BACKGROUND AND OBJECTIVES

- Since the successful cloning of Dolly the sheep in 1996, the possibility of milk or meat from cloned animals entering the food supply has existed. This possibility is much closer after the Food and Drug Administration (FDA) concluded in 2008 that meat and milk from cloned cows are as safe to eat as food from conventionally bred animals. Consequently mandatory labeling is not required for cloned animal products.
- Even though milk from cloned cows exists, they are yet to enter the food supply as companies with cloned animals continue to follow the voluntary moratorium suggested by the USDA. If or when they do, however, the above FDA rulings mean that consumers will be unable to tell if the milk or meat they are purchasing was the product of a cloned animal or not. Depending on consumer reaction to this situation, markets for these products could become inefficient and overall welfare could be reduced.

The objectives of the study were thus to:

- Investigate consumers' acceptance of milk from cloned cows.
- Examine consumers' opinions and knowledge of animal cloning, their views on labeling and whether cloning should be allowed.
- Examine specific consumer attributes that influence their acceptance of cloned cow milk.

Is milk from these two cows different?

Conventional cow

Cloned cow

EXPERIMENTAL DESIGN

- **Dates** : October 10 – October 17, 2012
- **Location** : University of Delaware, Battery Park (New Castle County), Newark Natural Foods and Wilmington Farmer's Market. All locations are in Delaware.
- **Design Method**: Becker–DeGroot–Marschak (BDM) mechanism.
- **Items** : Two gallons of milk, with the brand name of one of the gallons taken off.
- **Payment** : $2 for participating plus additional earnings in the auction process.

Procedure

First, interested participants were told about the FDA's conclusion of safety regarding food products from cloned animals. Then the BDM mechanism was used to elicit subjects' willingness to accept (WTA) milk that may have come from cloned cows.

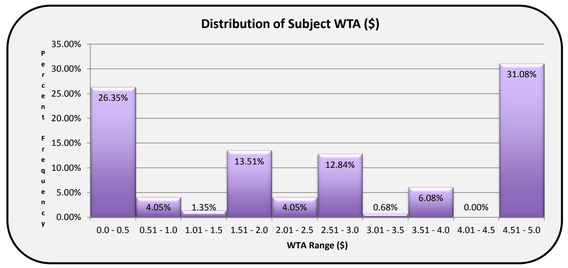
In more detail, subjects were shown two refrigerated gallons of milk in a visible ice chest and were told they were being offered a cup of conventional milk from one. They were then asked how much money they wished to be compensated with, between **$0 - $5**, to exchange that for a cup of milk that may or may not have come from a cloned cow.

Their offer was compared to a randomly drawn amount between $0 and $5 in $0.25 increments. When the subject's offer was less than the random amount, they were paid the amount equal to the random number and offered a cup of the potentially cloned cow milk to drink. Subjects whose offer was equal or greater than the randomly drawn number were offered a cup of conventional milk and no compensation paid.

DATA ANALYSIS

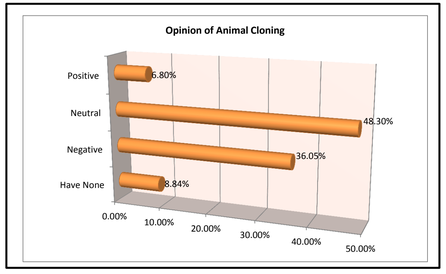
Mean compensation requested was $2.65, which was found to be significantly different from 0.

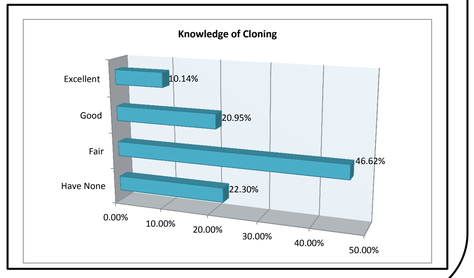
The largest group, at 31.08%, requested compensation between $4.51 and $5.00 to consume the milk that may have originated from cloned cows.



Nearly half of respondents had a neutral opinion of animal cloning.

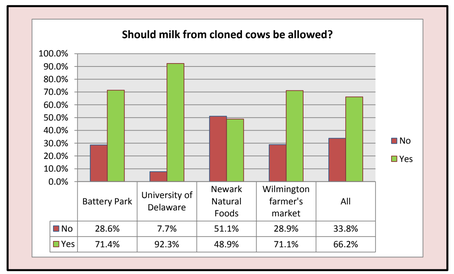
A little over 45% of respondents indicated having a fair knowledge of animal cloning.



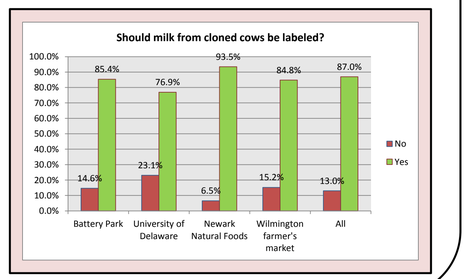


Majority of respondents (66.2%) wanted milk from cloned cows allowed.

An overwhelming proportion (87%) of respondents preferred labels on milk from cloned cows.



	Battery Park	University of Delaware	Newark Natural Foods	Wilmington farmer's market	All
No	28.6%	7.7%	51.1%	28.9%	33.8%
Yes	71.4%	92.3%	48.9%	71.1%	66.2%



RESULTS AND CONCLUSION

To analyze WTA further, a two-limit tobit model, checked for heteroskedasticity was run using the collected survey variables.

Parameter	Estimate
conventional	0.557
gallons	-0.447
environment	1.566
ethical	0.443
animal	-0.975
opinion	3.040
allow	-1.288

Parameter	Estimate
label	1.138
grocery	-2.949
child	2.324
read	0.996
male	-2.383
white	-1.074
income	-0.008

shows significance at 10%

shows significance at 5%

The mean compensation of $2.65 which was significantly different from zero suggests that consumers may be willing to consume milk that may have come from a cloned cow only if they are compensated, or more practically when a price discount is available.

Consumers who often purchased conventional milk were found to be less accepting of milk from cloned cows.

Subjects who regularly made food purchase decisions based on the environment and ethical reasons were less likely to want to consume milk from cloned cows. Such consumers may be concerned about the eventual impacts of animal cloning on the ecosystem and may believe that cloning animals is morally wrong.

Also, consumers who held a negative opinion of animal cloning were less likely to consume milk from cloned cows, compared to those who held other opinions. Similarly, consumers who often read food labels had a lower likelihood of taking milk from cloned cows.

On the flip side, subjects who wanted milk from cloned cows allowed and principal grocery shoppers were more accepting of cloned cow milk. Interestingly, consumers who purchased higher volumes of milk weekly and who made food purchase decision based on animal welfare concerns were found to be more accepting of milk from cloned cows. For the latter, a possible explanation is that consumers who are very mindful of animal welfare in their food choices may not consider cloning for milk purposes strongly objectionable as may be the case if cows were cloned for beef.

Demographics influenced subjects willingness to accept milk from cloned cows. Subjects who lived with children less than 18 years were less accepting of cloned cow milk. Males and Caucasians were observed to be more accepting of milk from cloned cows. Also, subjects with higher household incomes were more willing to accept milk from cloned cows.

Subjects did not support the FDA's position on labeling, with over 80% preferring food products from cloned animals labeled. Regardless, over 65% of subjects wanted milk from cloned cows allowed.

Piecing these findings together, it can be concluded that whilst some consumers have a strong aversion to food products from cloned animals, many are not necessarily opposed to having these products in the marketplace. Rather, consumers prefer the option where they can identify and choose between cloned animal products or the conventional version.