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**TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE**

**BEFORE THE SENATE
COMMITTEE ON AGRICULTURE AND ENVIRONMENT
AND
COMMITTEE ON HEALTH AND HUMAN SERVICES**

**WEDNESDAY, MARCH 13, 2024
1:02 PM
CONFERENCE ROOM 224 & VIDEOCONFERENCE**

**HOUSE BILL NO. 1989, HD2
RELATING TO RAW MILK**

Chairs Gabbard and San Buenaventura, Vice Chairs Richards and Aquino, and
Members of the Committees:

Thank you for the opportunity to testify on House Bill 1989, HD2. This bill authorizes and decriminalizes the sale of raw milk, raw milk products, and raw milk dairy products directly from producers to consumers, for human consumption, subject to certain restrictions. Authorizes the sale of raw goat milk for pet consumption. Establishes labeling requirements. Requires the Board of Agriculture and Department of Health (DOH) to adopt rules no later than 7/1/2025. The Department of Agriculture (DOA) respectfully opposes this bill.

The State of Hawaii currently prohibits the sale of raw milk in any form. The DOH Hawaii Administrative Rule, Title 11, Chapter 15, "Milk", Section 11-15-46, Milk and milk products which may be sold, states in part that "Only Grade "A" pasteurized milk and milk products shall be sold to the final consumer."



The consumption of raw milk and raw milk products is a public health and milk safety issue. Raw milk is unsafe because it can contain disease causing pathogens according to Food and Drug Administration (FDA), Centers for Disease Control and American Academy of Pediatrics. This bill states that a label is required that warns about the risks of consuming raw milk by stating that “RAW MILK MAY CONTAIN HARMFUL BACTERIA THAT ARE UNSAFE TO CONSUME.” In August 2020, a food fact sheet was published by FDA to provide information on “The Dangers of Raw Milk” and is available at the following link:

<https://www.fda.gov/media/119383/download#:~:text=Raw%20milk%20is%20milk%20from,often%20called%20%E2%80%9Cfood%20poisoning.%E2%80%9D>

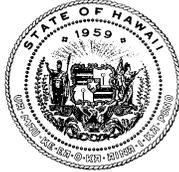
The placement of this bill under Chapter 157 Hawaii Revised Statutes (Milk Control Act) is not appropriate because this statute was intended to regulate pasteurized milk and to maintain stability in the dairy industry. The milk control program is self-funded by licensing fees collected from about 50 producers and processors which were decreasing in number to the point where it is no longer self-sustaining because there is only one remaining dairy and one processor, making the Milk Control Act obsolete and subject to repeal.

The proposed definition of “Milk-bearing animal” would also now include cow, goat, or sheep that is actively producing milk. The Milk Control Act was only intended to regulate the dairy industry, and only milk produced from cows. The existing definition of “Milk” in Chapter 157-1 is “Milk” is the lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows.

The proposed definition of “Distribute” meaning to transfer an item or offer to transfer an item to another person, either free of charge or by sale or exchange, appears to be misleading and in contradiction to the existing definition of “Distributor” found in the existing Chapter 157-1 definitions where “Distributor” means any person not producing milk who buys, processes, [and] or containerizes milk for sale to consumers, stores, or others.”

In addition, there are concerns with this bill regarding licensing and enforcing the maximum ten -Milk-bearing animal requirement on these many small producer-distributors, given that there are also provisions where producers may share cows, goat, or sheep for the purposes of producing raw milk or raw milk products. There are also potential problems with determining and collecting licensing fees. The revenues collected from monitoring the small producer-distributors containerizing their own raw milk and raw milk products for sale directly to consumers will be insufficient to sustain operations. Consequently, the DOA will be unable to enforce the proposed amendments.

Thank you for the opportunity to testify on this measure.



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**Testimony in OPPOSITION of HB1989 HD2
RELATING TO RAW MILK**

SENATOR MIKE GABBARD, CHAIR
SENATE COMMITTEE ON AGRICULTURE AND THE ENVIRONMENT
SENATOR JOY A. SAN BUENAVENTURA, CHAIR
SENATE COMMITTEE ON HEALTH AND HUMAN SERVICES

Hearing Date: 3/13/2024 1:02 pm

Room Number: Rm 224
VIDEO CONF

- 1 **Fiscal Implications:** This measure has substantial fiscal implications that is not included in the
- 2 executive budget.
- 3 **Department Testimony:** The Department of Health (department) opposes this measure.
- 4 The department opposes this bill due to serious public health concerns.
- 5 Section 1 of the bill finds that people in Hawaii desire to drink raw milk. However, the
- 6 Department urges the legislature to weigh the potential health risk allowing raw milk to be sold.
- 7 Based on CDC data, literature, and state and local reports, FDA compiled a list of outbreaks that
- 8 occurred from 1998 through 2018 in the US. During this period, there were at least 202
- 9 outbreaks due to the consumption of raw milk and raw milk products. These outbreaks caused
- 10 2,645 cases of illnesses, 269 hospitalizations, 3 deaths, 6 stillbirths and 2 miscarriages. The
- 11 numbers of outbreaks and illness cases were likely higher than the above estimates due to
- 12 underreporting.
- 13 If this measure is passed, the public could be exposed to undue risk of serious illness or death by
- 14 possible exposure to pathogenic organisms. Our Keiki, Kupuna, and the immunocompromised
- 15 face even greater risk than the general public, as they will face much greater difficulty fighting
- 16 off any pathogens ingested and will have a much higher mortality rate for almost all pathogens
- 17 associated with consuming raw dairy products. The FDA and the CDC have published many
- 18 science based articles debunking every statement in Section 1, and is included in this testimony.
- 19 According to the CDC's most recent study, states/counties where raw milk was legally sold had
- 20 3.2 times more outbreaks than areas where the sale of raw milk was illegal. Areas where raw

1 milk was allowed to be sold in retail stores had 3.6 times more outbreaks than areas where sale
2 was allowed only on farms. The study shows that laws that increase the availability of raw milk
3 are associated with more illnesses and outbreaks. In addition, the CDC reported that consuming
4 unpasteurized milk is 150 times more likely to cause foodborne illness and 13 times more
5 hospitalizations than drinking pasteurized milk products.

6 Of the 133 outbreaks occurring from 1987 to September 2010, 5 were multistate outbreaks with
7 cases from at least two states. The remaining 128 outbreaks occurred in 30 states. Of these 30
8 states, 20 allowed some type or raw milk sale for direct human consumption according to the
9 National Association of State Departments of Agriculture survey of 2008 (NASDA, 2008).
10 Outbreaks from these 20 states accounted for 80% of all outbreaks in the US during this period.
11 The three states that had the highest frequencies of outbreaks are California, Washington, and
12 Utah, accounting for about 12%, 12%, and 8% of all outbreaks, respectively.

13 The State of Hawaii currently prohibits the sale of raw milk in any form. Hawaii Administrative
14 Rules, Title 11, Chapter 15, "Milk", Section 11-15-45, Milk and Milk Products which may be
15 sold., states in part that "Only Grade "A" pasteurized milk and milk products shall be sold to the
16 final consumer"...

17 Please be advised that FDA and other federal and state health agencies have documented a long
18 history of the risks to human health associated with the consumption of raw milk. Clinical and
19 epidemiological studies from FDA, state health agencies, and others have established a direct
20 causal link between gastrointestinal disease and the consumption of raw milk. The microbial
21 flora of raw milk may include human pathogens present on the cow's udder and teats. Further,
22 the intrinsic properties of milk, including its pH and nutrient content, make it an excellent media
23 for the survival and growth of bacteria.

24 On August 10, 1987, FDA published in 21 CFR Part 1240.61, a final regulation mandating the
25 pasteurization of all milk and milk products in final package form for direct human consumption.
26 This regulation addresses milk shipped in interstate commerce and became effective September
27 9, 1987.

28 In this Federal Register notification for the final rule to 21 CFR Part 1240.61, FDA made a
29 number of findings including the following:

30 "Raw milk, no matter how carefully produced, may be unsafe."

31 "It has not been shown to be feasible to perform routine bacteriological tests on the raw
32 milk itself to determine the presence or absence of all pathogens and thereby ensure that
33 it is free of infectious organisms."

34 "Opportunities for the introduction and persistence of *Salmonella* on dairy premises are
35 numerous and varied, and technology does not exist to eliminate *Salmonella* infection

1 from dairy herds or to preclude re-introduction of *Salmonella* organisms. Moreover
2 recent studies show that cattle can carry and shed *S. dublin* organisms for many years and
3 demonstrated that *S. dublin* cannot be routinely detected in cows that are mammary gland
4 shedders."

5 During this rulemaking process, the American Academy of Pediatrics and numerous others
6 submitted comments in support of the proposed regulation.

7 In deciding upon mandatory pasteurization, FDA determined that pasteurization was the only
8 means to assure the destruction of pathogenic microorganisms that might be present. This
9 decision was science-based involving epidemiological evidence. FDA and the CDC have
10 documented illnesses associated with the consumption of raw milk, including "certified raw
11 milk" and have stated that the risks of consuming raw milk far outweigh any benefits.

12 In light of research showing no meaningful difference in the nutritional value of pasteurized and
13 unpasteurized milk, FDA and CDC have also concluded that the health risks associated with the
14 consumption of raw milk far outweigh any benefits derived from its consumption.

15 There are numerous documented outbreaks of milk-borne disease involving *Salmonella* and
16 *Campylobacter* infections directly linked to the consumption of unpasteurized milk in the past 20
17 years. Since the early 1980's, cases of raw milk-associated campylobacteriosis have been
18 reported in the states of Arizona, California, Colorado, Georgia, Kansas, Maine, Montana, New
19 Mexico, Oregon, and Pennsylvania. An outbreak of Salmonellosis, involving 50 cases was
20 confirmed in Ohio in 2002. Recent cases of *E. coli* O157:H7, *Listeria monocytogenes* and
21 *Yersinia enterocolitica* infections have also been attributed to raw milk consumption.

22 State health and agricultural agencies including the State of Hawaii routinely use the U.S. Public
23 Health Service/FDA Pasteurized Milk Ordinance (PMO) as the basis for the regulation of Grade
24 "A" milk production and processing. The PMO has been sanctioned by the National Conference
25 on Interstate Milk Shipments (NCIMS) and provides a national standard of uniform measures
26 that is applied to Grade "A" dairy farms and milk processing facilities to assure safe milk and
27 milk products. Section 9 of the PMO specifies that only Grade "A" pasteurized milk be sold to
28 the consumer.

29 Section 1. (lines 6-9) also has a misleading and false sentence that states, "Raw milk has a
30 unique flavor that may be destroyed by the double pasteurization process generally required for
31 commercial milk sales." Since the demise of Meadow Gold dairies in 2019, there has been no
32 milk on Hawaii's retail shelves that is "double pasteurized", as that has never been required for
33 commercial milk sales where the milk was produced by local dairies in Hawaii.

1 Section 6. is also objectionable from a public health standpoint as the handling of any raw milk
2 product may expose persons to the same pathogens of public health concerns. Children relish in
3 the act of feeding pets and their health will also be placed at undue risk if this measure passes.
4 The department also opposes any cow sharing and raw milk for animal/pet consumption as that
5 milk is frequently diverted as raw milk consumption to humans.

6 The following is the most current scientific thought from the FDA on

7 **Raw Milk Misconceptions and the Danger of Raw Milk Consumption**

8 Raw milk can contain a variety of disease-causing pathogens, as demonstrated by numerous
9 scientific studies. These studies, along with numerous foodborne outbreaks, clearly demonstrate
10 the risk associated with drinking raw milk. Pasteurization effectively kills raw milk pathogens
11 without any significant impact on milk nutritional quality.

12 In this document, the FDA provides a close examination of the myths associated with drinking
13 raw milk. The review below is based on scientific literature.

14 **Raw milk does not cure lactose intolerance.**

15 Lactose is a unique disaccharide found in milk. Lactose concentration in bovine milk is about
16 4.8%. People with lactose intolerance lack the enzyme, beta-galactosidase or lactase, to break
17 down lactose into glucose and galactose during digestion. All milk, raw or pasteurized, contains
18 lactose and can cause lactose intolerance in sensitive individuals. There is no indigenous lactase
19 in milk.

20 Raw milk advocates claim that raw milk does not cause lactose intolerance because it contains
21 lactase secreted by “beneficial” or probiotic bacteria present in raw milk. As discussed in a later
22 section (claim 4), raw milk does not contain probiotic organisms.

23 Fermented dairy products, especially yogurt, have been reported to ease lactose mal-absorption
24 in lactose intolerant subjects (McBean and Miller, 1984; Lin et al., 1991; Onwulata et al., 1989;
25 Savaiano et al., 1984). This enhanced digestion of lactose has been attributed to the intra-
26 intestinal hydrolysis of lactose by lactase secreted by yogurt fermentation microorganisms (Lin
27 et al., 1991; Savaiano et al., 1984). However, raw milk does not contain the same types of
28 microorganisms at the similar levels that are found in yogurt. Yogurt that showed a benefit
29 towards lactose intolerance typically contained 10^7 cfu/ml or higher levels of *Streptococcus*
30 *thermophilus* and *Lactobacillus bulgaricus*, and these microorganisms
31 were **purposely** inoculated during yogurt manufacturing (Lin et al., 1991; Savaiano et al., 1984).

32 **Raw milk does not cure or treat asthma and allergy.**

1 The PARSIFAL study (Waser et al., 2007) has been misused by raw milk advocates ever since it
2 was published. The PARSIFAL study found an inverse association of **farm**
3 **milk** consumption, **not raw milk consumption**, with asthma and allergy. The authors of the
4 PARSIFAL study clearly indicated in the paper that the “*present study does not allow evaluating*
5 *the effect of pasteurized vs. raw milk consumption because no objective confirmation of the raw*
6 *milk status of the farm milk samples was available.*” In fact, in the study, about half of the farm
7 milk was boiled (Waser et al., 2007). The authors of the PARSIFAL study concluded that “*raw*
8 *milk may contain pathogens such as salmonella or EHEC, and its consumption may therefore*
9 *imply serious health risks... At this stage, consumption of raw farm milk cannot be recommended*
10 *as a preventive measure.*” (Waser et al., 2007)

11 Regarding allergy, research has shown that raw milk and pasteurized milk do not differ in their
12 anaphylactic-sensitizing capacity when tested in both animal models (Poulsen et al., 1987;
13 McLaughlan et al., 1981) and in human clinical trials (Host and Samuelsson, 1988).
14 Pasteurization conditions have little impact on casein structure and only cause limited whey
15 protein denaturation. Therefore, it is not surprising that pasteurization does not change the
16 allergenicity of milk proteins.

17 For example, Host and Samuelsson (1988) compared the allergic responses caused by raw,
18 pasteurized (75°C/15 s), and homogenized/pasteurized milk in five children who are allergic to
19 cow milk (aged 12 to 40 months). All children developed significant and similar allergic
20 reactions from the consumption of the above three types of milk (Host and Samuelsson, 1988).
21 The authors concluded that children with proven milk allergy can not tolerate milk, raw or
22 pasteurized (Host and Samuelsson, 1988).

23 **There are no beneficial bacteria in raw milk for gastrointestinal health.**

24 Bacteria found in raw milk are not probiotic. Probiotic microorganisms must be non-pathogenic
25 (Teitelbaum and Walker, 2000). In contrast, raw milk can host various human pathogens,
26 including *E. coli* O157:H7, *Salmonella*, *Streptococcus spp.*, *Yersinia*
27 *enterocolitica*, *Campylobacter jejuni*, *Staphylococcus aureus*, *Listeria monocytogenes*,
28 *Mycobacterium tuberculosis*, and *Coxiella burnetti* to name a few (Oliver et al., 2005; Hayes and
29 Boor, 2001).

30 Probiotic microorganisms must be of human origin in order to have an impact on human health
31 (Teitelbaum and Walker, 2000). Bacteria present in raw milk are from infected udder tissues
32 (e.g., mastitis causing bacteria), the dairy environment (e.g., soil, water, and cow manure), and
33 milking equipment. High bacteria counts in raw milk only indicate poor animal health and poor
34 farm hygiene.

35 Bacteria in raw milk are typically not of human origin. An exception is *Streptococcus*
36 *pyogenes*. *S. pyogenes* that has adapted to humans can be transmitted to animals. Once *S.*
37 *pyogenes* is colonized in animals, it can be re-transmitted to humans as a **human pathogen** that

1 causes strep throat. For example, *S. pyogenes* can infect a cow udder to cause mastitis. The
2 infected cow udder can subsequently shed *S. pyogenes*, a pathogen, into raw milk.

3 Bifidobacteria have been mentioned by raw milk advocates as the “good bugs” in raw milk.
4 Bifidobacteria are bacteria commonly found in human and animal gastrointestinal track and they
5 are bacteria that make up the gut flora (Arunachalam, 1999). Since bifidobacteria are found in
6 cow’s GI track, they are present in cow’s fecal matter. Raw milk collected with proper hygiene
7 should not contain bifidobacteria. In fact, the presence of bifidobacteria in raw milk indicates
8 fecal contamination and poor farm hygiene (Beerens et al., 2000; Beerens and Neut, 2005).

9 **Raw milk is not an immune system building food and is particularly unsafe for**
10 **children.**

11 Children are typically more vulnerable than adults to the pathogens than can occur in raw milk.
12 In 2005, an *E. coli* O157:H7 outbreak in Washington and Oregon was linked to raw milk sold in
13 Washington state (CDC, 2007). Among the 18 patients, the 5 hospitalized were all children aged
14 1-13; 4 of them developed Hemolytic Uremic Syndrome (HUS) (CDC, 2007).

15 In September 2006 in California, two children developed HUS from drinking raw milk
16 contaminated with *E. coli* O157:H7. Three weeks later, four more children acquired the same
17 infection from raw milk or raw colostrum produced by the same dairy (CDC, 2008).

18 In Sep 2006, two children became sick after drinking unpasteurized milk from a licensed dairy in
19 Washington State. The raw milk was contaminated with *E. coli* O157:H7. One child was
20 hospitalized (WSDH, 2006).

21 In July 2008 in Connecticut, 14 people were sickened by raw milk contaminated with *E.*
22 *coli* O157: H7. The three most seriously ill were children; two of them developed HUS
23 (FoodHACCP.com, 2008).

24 In May 2008 in Missouri, four people became sick after drinking raw goat milk contaminated
25 with *E. coli* O157: H7. The two severely ill were children and both were hospitalized (CDC,
26 2008).

27 In July 2010 in Colorado, eight people became sick after drinking raw goat milk contaminated
28 with both *Campylobacter* and *E. coli* O157: H7. Two children were hospitalized (Boulder
29 County Public Health, 2010a, b)

30 **There are no immunoglobulins in raw milk that enhance the human immune system.**

31 The concentration of immunoglobulins in bovine milk is low, typically about 0.6-1.0 mg/ml
32 (Hurley, 2003). At these low concentrations, bovine immunoglobulins, when consumed directly
33 from milk, are physiologically insignificant to humans (Fox, 2003).

1 The predominant fraction of immunoglobulins in bovine milk is IgG (about 85-90%). IgG is
2 quite heat stable. In one study, LTLT pasteurization (63°C for 30 min) had no impact on the
3 level of IgG, and HTST pasteurization (72°C/15s) resulted in only 1% denaturation of IgG
4 (Mainer et al., 1997).

5 Kulczychi (1987) hypothesized that the heat-aggregated immunoglobulins may actually have
6 better immunological function because aggregation can amplify the binding affinity of IgG to
7 receptor sites.

8 **Raw milk is not nutritionally superior to pasteurized milk.**

9 Numerous studies have indicated that pasteurization has minimal impact on milk nutritional
10 quality.

11 ***Milk proteins***

12 Normal bovine milk contains about 3 to 3.5% total protein. The two major groups of milk protein
13 are casein (about 80%) and whey proteins (about 20%). The protein quality of pasteurized milk
14 is not different from that of raw milk (Andersson and Oste, 1995).

15 Using *in vitro* method, Carbonaro et al (1996) found no difference in protein digestibility
16 between raw milk (80.2%), milk pasteurized at 75°C/15s (80.02%), and milk pasteurized at
17 80°C/15s (80.3%).

18 In an animal study (weaning Holtzman male rats), Efigenia et al (1997) evaluated the nutritional
19 quality of bovine milk after pasteurization. After a study period of 28 days, there was no
20 difference in animal weight gain, food intake, food efficiency ration, protein efficiency ratio, or
21 apparent protein digestibility between the rat group that consumed raw bovine milk and the
22 group that consumed pasteurized bovine milk (Efigenia et al., 1997).

23 Similar results were obtained in another animal study by Lacroix et al (2006). In this study, no
24 difference in protein digestibility was observed between milk protein without heat treatment and
25 the same protein heated at 72°C/20s or 96°C/5s (Lacroix et al., 2006).

26 In a recent human study, Lacroix et al (2008) evaluated the impact of heat treatment on protein
27 quality by studying dietary nitrogen metabolism following a single meal. Human subjects were
28 fed a meal formulated with milk protein with or without HTST pasteurization (72°C/20s). The
29 same metabolic utilization of milk protein nitrogen was observed for both raw and pasteurized
30 milk (Lacroix et al, 2008).

31 ***Milk vitamins***

32 Milk contains both fat soluble and water soluble vitamins. Fat soluble vitamins include A, D, E,
33 and K. Water soluble vitamins included B1 (thiamin), B2 (riboflavin), niacin, pantothenic acid,
34 B6, biotin, folic acid, B12, and vitamin C (Renner et al., 1989). In general, pasteurization has a

1 little effect on milk vitamin levels (Bendicho et al., 2002; Renner et al., 1989). Vitamins that are
2 present at high levels in milk, such as riboflavin, B6 and B12, are relatively heat stable. Other
3 factors, such as storage temperature, dissolved oxygen, light exposure, packaging, and length of
4 storage can have a much greater impact on milk vitamin stability (Gaylord et al., 1986; Kon,
5 1972; Lavigne et al., 1989; Pizzoferrato, 1992; Renner et al., 1989; Scott et al., 1984a; Scott et
6 al., 1984b).

7 The only vitamin that is significantly heat labile is vitamin C but milk is an insignificant source
8 for vitamin C. A cup of milk (240 ml) only provides about 5 mg of vitamin C (Renner et al.,
9 1989).

10 Vitamin C is very susceptible to oxidation. Sample to sample variation can be considerable
11 (Scott et al., 1984a) and degradation can happen immediately after milking due to photo-
12 oxidation (Kon, 1972; Renner et al., 1989; Scott et al., 1984a). Reported values of vitamin C
13 vary depending on seasonality, storage temperature, and elapsed time before analysis.

14 Lavigne et al (1989) reported that HTST at 72°C/16s reduced vitamin C in goat milk by 5%.
15 Haddad and Loewenstein (1983) observed vitamin C level of 23.3 mg/liter in raw milk. After
16 pasteurization at 72°C/16s, vitamin C was reduced by 16.6%. Similarly, Head and Hansen
17 (1979) reported that in whole milk, vitamin C was reduced about 15% (from 24.3 mg/liter to
18 20.7 mg/liter) after pasteurization.

19 The loss of vitamin C increases with heating temperature and time and fits the first order kinetic
20 model (Bendocho et al., 2002; Haddad and Loewenstein, 1983). Substantial loss only occurred
21 after very high temperature heating for long time. For example, heating at 90°C for 10 min can
22 cause 70% reduction in vitamin C (Bendicho et al., 2002).

23 Interestingly, Pizzoferrato (1992) indicated that vitamin C retention during storage is better in
24 heated milk (72°C/15s, 75°C/15s, 80°C/15s) than in raw milk. The better retention was due to
25 the removal of oxygen and the inactivation of peroxidase and microorganisms during heat
26 treatment (Pizzoferrato, 1992).

27 **Folate binding protein (FBP) is not denatured during pasteurization and folate**
28 **utilization is not reduced in pasteurized milk.**

29 The concentration of folate in milk is low, about 5 -8µg/100g (Renner et al., 1989; Andersson
30 and Oste, 1994). Dietary reference intake for folate is 400 µg per day for male 19-30 years of age
31 (http://iom.edu/~media/Files/Activity%20Files/Nutrition/DRI/DRI_Vitamins.pdf). Milk is not
32 a folate rich food.

33 Pasteurization has a limited impact on milk folate level. Folate remains bound to folate binding
34 protein (FBP) after pasteurization (Wigertz et al., 1996). Andersson and Oste (1994) observed no
35 change in milk folate content after pasteurization at 75°C for 16s. Wigertz and Jägerstad (1993)

1 reported a slight decrease of folate content from 8µg/100 g to 6.4µg/100g after pasteurization at
2 74°C for 15s.

3 Studies have shown some decrease in the concentration of folate binding protein (FBP) after
4 pasteurization but the decrease is typically small and a substantial amount of residual FBP is still
5 present in the pasteurized milk. For example, Wigertz et al (1996) observed a FBP concentration
6 of 211± 7 nmol/l in raw milk. After pasteurization (74°C/15s), FBP concentration was about 168
7 ± 20 nmol/l (Wigertz et al, 1996). In a separate study, Wigertz and Jägerstad (1993) found no
8 difference in FBP concentration before and after pasteurization (74°C/15s).

9 **Pasteurized milk is safer than raw milk.**

10 The outbreaks and illnesses attributed to raw milk are alarming when one considers the
11 extremely low volume of raw milk consumed in the US. Outbreaks due to raw milk and raw
12 milk products continue to occur each year. In 2010 alone, raw milk has been associated with at
13 least 8 documented outbreaks:

- 14 • New York, *Campylobacter* outbreak, 5 illnesses (New York Department of Health, 2010)
- 15 • Michigan, *Campylobacter* outbreak, 12 illnesses (FDA, 2010)
- 16 • Pennsylvania, *Campylobacter* outbreak, 10 illnesses (PRNewswire, 2010)
- 17 • Utah, *Campylobacter* outbreak, 9 illnesses (Utah Department of Health, 2010)
- 18 • Utah, *Salmonella* outbreak, 6 illnesses (Utah Department of Health, 2010)
- 19 • Minnesota, *E. Coli* O157:H7 outbreak, 8 illnesses and 4 hospitalizations (Minnesota
20 Department of Health, 2010)
- 21 • Washington, *E. Coli* O157:H7 outbreak, 8 illnesses (Washington State Department of
22 Health, 2010)
- 23 • Colorado, *Campylobacter* and *E. Coli* O157:H7 outbreak, 30 illnesses, 2 hospitalizations
24 (Boulder County Public Health, 2010a, b)

25 **Raw milk produced under HACCP does not make it safe to drink.**

26 FDA does not believe that HACCP can ensure raw milk safety. The sanitary procedures
27 described in a food safety plan under HACCP might help to reduce the probability of raw milk
28 contamination but they will not ensure that raw milk is pathogen-free.

29 As the preceding discussion demonstrates, raw milk does not naturally kill pathogens of concern.
30 Further, testing raw milk for the various pathogens prior to consumption can not be used as an
31 alternative to pasteurization. The potential pathogens present in raw milk can be diverse,
32 variable, and unpredictable. It is simply impossible to test every single batch of raw milk for
33 every single pathogen prior to human consumption. More importantly, the inability of a method
34 to detect pathogens does not indicate the absence of pathogens (Oliver et al., 2009).

1 There is no visual or sensory indicator for the presence of pathogen. Typical milk quality
2 indicators, such as standard plate counts and somatic cell counts, do not provide information on
3 the presence or absence of pathogens. Seemingly high quality raw milk based on these routine
4 quality indicators can still contain pathogen (Van Kessel et al., 2008). In the Federal Register
5 notification for the final rule to 21 CFR Part 1240.61, FDA made a number of findings including
6 the following:

7 *"It has not been shown to be feasible to perform routine bacteriological tests on the raw milk*
8 *itself to determine the presence or absence of all pathogens and thereby ensure that it is free of*
9 *infectious organisms."*

10 HACCP ensures product safety through process control and not by finished product testing.
11 HACCP has been considered possible for chemical and physical hazard controls in farm settings.
12 However, HACCP is not effective or even possible in farm settings for biological hazards,
13 including pathogens (Cullor, 1997; Sperber, 2005). Cullor (1997) indicated that potential
14 biological hazards that may exist on the dairy farms do not have well-known critical control
15 points. Since establishing critical control points is one of the most important aspects of HACCP,
16 without well-known critical control points, HACCP simply does not work for pathogen control
17 for raw milk production on the farm.

18 Organic Pastures is an example of a raw milk producer with a HACCP plan whose milk has been
19 found to contain pathogens. In 2007, raw cream from Organic Pastures was found to be
20 contaminated with *Listeria monocytogenes* (FDA, 2007). In 2006, raw milk contaminated
21 with *E. coli* O157:H7 from Organic Pastures was implicated in an outbreak that resulted in 6
22 illnesses and 3 hospitalizations (CDC, 2008). The median age of this outbreak's victims was 8
23 years (range: 6- 18 years) (CDC, 2008).

24 **Summary**

25 None of the claims made by the raw milk advocates that we have examined for you can
26 withstand scientific scrutiny. Unfortunately, the false "health benefits" claims of raw milk
27 advocates may cause parents to give raw milk to their children and prompt immuno-
28 compromised people, such as pregnant women, the elderly, and hospitalized patients, who want
29 better nutrition, to also start consuming raw milk. It is these very same sub-groups of the
30 population, however, that are most at risk for becoming ill or even dying from foodborne illness
31 as a result of consuming adulterated raw milk. Since raw milk may contain human pathogens,
32 the consumption of raw milk products increases the risk of gastrointestinal illness due to the
33 likelihood that it may contain infective doses of human pathogens. This includes our Keiki,
34 Kupuna, and any person who is immunocompromised due to illness or treatment of illnesses.
35 The only method proven to be reliable in reducing the level of human pathogens in milk and
36 milk products is by those milk products being produced and processed under sanitary conditions
37 and subsequently being properly pasteurized.

- 1 This is the link to the FDA fact sheet Titled “THE DANGERS OF RAW MILK”
- 2 <https://www.fda.gov/media/119383/download#:~:text=Raw%20milk%20is%20milk%20from,of%20called%20%E2%80%9Cfood%20poisoning.%E2%80%9D>
- 3
- 4 Thank you for the opportunity to testify on this measure.
- 5 **Offered Amendments:** None



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March 13, 2024

HEARING BEFORE THE
SENATE COMMITTEE ON AGRICULTURE AND ENVIRONMENT
SENATE COMMITTEE ON HEALTH AND HUMAN SERVICES

TESTIMONY ON HB 1989, HD2
RELATING TO RAW MILK

Conference Room 224 & Videoconference
1:02 PM

Aloha Chairs Gabbard and San Buenaventura, Vice-Chairs Richards and Aquino, and Members of the Committees:

I am Brian Miyamoto, Executive Director of the Hawai'i Farm Bureau (HFB). Organized since 1948, the HFB is comprised of 1,800 farm family members statewide and serves as Hawai'i's voice of agriculture to protect, advocate and advance the social, economic, and educational interests of our diverse agricultural community.

The Hawai'i Farm Bureau opposes HB 1989, HD2, which authorizes and decriminalizes the sale of raw milk, raw milk products, and raw milk dairy products directly from producers to consumers, for human consumption, subject to certain restrictions, authorizes the sale of raw goat milk for pet consumption, and establishes labeling requirements.

Farm Bureau policy states: "We support only pasteurized fluid milk being sold or distributed for human consumption." The Farm Bureau policy was developed after intense discussion. Ultimately, the decision was made based on the FDA website on raw milk and studies conducted by the Centers for Disease Control and Prevention, which show that most dairy-related disease outbreaks have been linked to raw milk.

We recognize the niche market opportunities associated with raw milk. However, we also have a responsibility to protect the public. The FDA reports that the risk of getting sick from drinking raw milk is greater for infants and young children, the elderly, pregnant women, and people with weakened immune systems, such as people with cancer, an organ transplant, or HIV/AIDS, than it is for healthy school-aged children and adults. The CDC finds that foodborne illnesses caused by raw milk especially affect children and teenagers. But, it is important to remember that healthy people of any age can get very sick or even die if they drink raw milk contaminated with harmful germs."

Food safety is a priority for HFB. We have seen serious health consequences, and successful enterprises fail when food safety issues arise.

Thank you for the opportunity to comment on this measure.

TESTIMONY ON HAWAII HB 1989
In Support of Hawaii Raw Milk Sales
Senate Committees on Agriculture & Environment
(AEN) and Health & Human Services (HHS)

Presented on behalf of the
Weston A. Price Foundation
by Pete Kennedy, Esq.
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Hearing: March 13, 2024

Honorable Members of the Senate AEN & HHS Committees,

My name is Pete Kennedy. I am an attorney with the Weston A. Price Foundation (WAPF), an international nonprofit whose primary mission is to restore nutrient-dense foods to the American diet through research, education and activism. WAPF has members in all 50 states, including Hawaii, and is the leading raw milk advocacy organization in the U.S. I have worked on legal issues governing raw milk distribution for the past 20 years. I have consulted on state and federal milk legislation and have drafted raw milk bills as well (including Hawaii). I am familiar with the raw milk laws in every state.

At this time forty-six (46) states have legalized the sale and/or distribution of raw milk through statute, regulation or policy.

- Fourteen (14) states allow the sale of raw milk for human consumption in retail stores: AL, AZ, CA, CT, ID, ME, NH, NM, OR, PA, SC, UT, WA and WY.
- Seventeen (17) states allow the sale of raw milk for human consumption direct from the producer to the consumer: AR, IA, IL, KS, MA, MN, MS, MO, MT, ND, NE, NY, OK, SD, TX, VT, WI, and.
- Nine (9) states allow distribution raw milk through herdshare agreements: CO, IN, KY, MI, NC, OH, TN, VA, and WV. A herdshare agreement is an arrangement where an individual purchases an ownership interest in a dairy animal or herd of dairy animals and obtains a percentage of the raw milk production proportionate to that ownership interest.
- The remaining six (6) states allow the sale of raw pet milk by farmers: AL, DE, FL, GA, MD, and NJ.

Hawaii is clearly an outlier. There is significant demand for raw milk in Hawaii; for many years, bills legalizing its sale or distribution have been before the legislature but rarely, if ever, have received a fair hearing. Consumption of raw milk is legal in Hawaii (as it is in all 50 states) but most consumers do not have the resources and/or know-how to own and board their own dairy animal(s), leaving them with no way to legally exercise that right.

It is far past time for Hawaii to legalize raw milk sales or distribution. Raw milk has a good track record for safety; there is documentation that, as demand for raw milk has increased over the last 15 to 20 years, the number of foodborne illnesses attributed to raw milk consumption has declined.

WAPF supports the passage of HB 1989.

Regarding the provision in the bill allowing the sale of raw pet goat milk, the *Official Publication* of the Association of American Feed Control Officials (AAFCO) consists of model regulations governing the production and sale of commercial feed for animal consumption, including pet food. All 50 states have adopted part or all of the AAFCO *Official Publication*; the publication allows the sale of raw milk. Even though there is an ill-conceived interstate ban on raw milk for human consumption, there is no federal ban on raw milk for pet consumption.

There are national manufacturers complying with federal and state regulations who are selling raw pet milk in nearly every state in the U.S.; in summer 2021, raw pet milk products of two of these manufacturers were confiscated in 20 Hawaii pet food stores that were trying to meet strong demand by

pet owners. There is substantial evidence that raw milk is healthier than pasteurized milk for pets. Here is a quote from Dr Pitcairn's *Complete Guide to Natural Health for Dogs and Cats* (page 21):

THE POTTENGER CAT STUDIES

One of the most fascinating sources of information about the importance of raw foods has come from what is now known as the Pottenger Cat Studies. Dr. Pottenger did not set out to study cat nutrition, but he became intrigued by differences in the health of cats he was using in experimental studies. Turning his attention to this topic, he did a series of nutritional comparisons. For several generations, one group of cats was fed completely raw (meat, bones, milk, and cod liver oil). Other groups of cats were fed the same foods either partially or completely cooked. What he found is of definite importance to anyone who wants to raise a truly healthy pet:

- Cats on the entirely raw food diet were completely healthy, never needing veterinary attention.
- The more the food was cooked, the less healthy were the cats that ate it.
- The health problems evident in the experimental cats on the cooked diet were remarkably like those commonly seen in cats today--mouth and gum problems, bladder inflammation, skin disorders, and the like.
- Over a period of three generations, the cats on the cooked food diet continue to deteriorate until they can no longer reproduce.
- When the cats were put back on a raw food diet, it took *three generations* for the animals to totally recover from the effects of the cooked food.

Passage of HB 1989 can help improve food security and self-sufficiency in Hawaii; the state currently has no dairy legally producing milk for sale. It would lead to more of the food dollar staying in the state and would expand consumer choice by enabling consumers to purchase not only raw milk but other raw dairy products as well. It would enable family farmers to further diversify their operations; in other states raw milk is often the food that draws the consumer to the farm, leading to increased sales of other farm products such as meat, poultry, eggs, and produce. Hawaiian residents should have the freedom to consume the food they believe best for their health and the health of their families.

For all these reasons, I urged the committee to pass HB 1989.

Respectfully submitted on behalf of the

Weston A. Price Foundation

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HB-1989-HD-2

Submitted on: 3/12/2024 6:26:58 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Tish Rothwell	Testifying for The Pet Depot	Support	Written Testimony Only

Comments:

Please allow raw goat milk for sale for pet use. The benefits afforded to the animals that need it could save their lives.

It is a beneficial source of enzymes, protein, electrolytes, minerals and fatty acids. Young and elderly pets benefit greatly.

HB-1989-HD-2

Submitted on: 3/9/2024 1:10:47 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Michael EKM Olderr	Individual	Oppose	Written Testimony Only

Comments:

I've said this before and will continue to say that raw milk is a danger to all consumers. Significant health problems and the risk of death outweigh the supposed health benefits it has. Decriminalizing it would essentially decriminalize poison to mothers and children. Every major health organization worldwide warns of the danger of consuming raw milk. Since the 20th century, the decline in consumption of raw milk has been linked to the infant mortality rate dropping to over 50%. We cannot go backward in time, not when the Black Plague and Measles outbreaks were happening on the continent. We are already seeing death and hospitalization all over the continent because of raw milk consumption. Comparatively, it would be if it were legal for car manufacturers to sell cars without brake lines or if there was a faulty engine and advertise them as safe to drive. People could get a new car, but they will be putting themselves and others in danger when doing so. It's dangerous and will overwhelm our already overly overburdened hospital staff. Please defer this measure.

I, Margaret E. (Peg) Coleman, MS, am a medical microbiologist and risk analyst specializing in benefit and risk assessments for microbial pathogens and food safety. My credentials include two graduate degrees and more than 30 years of experience in microbial risk analysis, initially for USDA and currently as a consultant. My appended resume documents previous expert testimony for multiple court cases and an extensive body of work relevant to raw milk microbes beginning in 2014. My expertise in microbial risk analysis is recognized in the US and internationally, evidenced by my recognition as a Fellow of the Society for Risk Analysis (SRA) in 2020, as an elected Counselor of SRA (2022-2024), and as a member of the Advisory Board of the Raw Milk Institute (RAWMI).

An extensive body of evidence is cited herein, in my written testimony and a supporting slide set. No scientific evidence supports the claim that raw milk produced for direct human consumption in the 21st century is inherently dangerous, for human breastmilk or milk from cows and goats.

Please pass this bill and permit consumers to choose real milk, fresh and unprocessed, complete with its natural beneficial microbiota illustrated in my supplemental slides.

Overview

My testimony is based on current evidence and peer-reviewed analyses that contradict major misconceptions about raw milk commonly offered without scientific support by individuals and organizations with pro-pasteurization biases. Appended are slides from a supplementary slide set that provide data and charts from peer-reviewed studies, including a manuscript entitled 'Trends in Burdens of Disease by Transmission Source (USA, 2005-2020) and Hazard Identification for Foods: Focus on Milkborne Disease' accepted by the *Journal of Epidemiology and Global Health* based on a US dataset provided by the Centers for Disease Control and Prevention (CDC). Relevant references are appended.

1. **Neither pasteurized nor raw milk is risk free.** My testimony today is based on a peer-reviewed analysis (Stephenson et al., 2024) of US CDC data for 2005-2020, the most recent 16 years of data available when requested. These data document significant numbers of pasteurized milk illnesses. Over 2000 illnesses were attributed to pasteurized milk in this period. (55%; 2,099 of 3,795 milkborne illnesses).
2. The **CDC data (2005-2020) do NOT support increasing raw milk illness with increasing access.** Charts and statistics from a manuscript on trends of these data (Stephenson et al., 2024), as well as additional data on trends in California and New York states, are included herein.
3. FDA/USDA (2003) found **both pasteurized and raw milks high risk** of listeriosis, but independent academic researchers (Latorre et al., 2011) subsequently estimated very low risk for raw milk.
4. **Two subsequent peer reviewed studies** (Coleman et al., 2023; Waller et al., 2024) document **pro-pasteurization biases in the FDA/USDA 2003 assessment.** The first study conducted by an independent laboratory documented suppression, not growth, of pathogens, and the latter study using the Risk Analysis Quality Test (RAQT) of the Society for Risk Analysis documented failures and shortcomings for all 73 questions about analysis quality for milkborne risks.

5. **Pasteurized milk** was associated with **significantly higher risks** of severe listeriosis and death than raw milk in a **recent systematic review for North America** (Sebastianski et al., 2022).
6. **Two peer-reviewed studies mapped extensive benefits** and **some evidence of risks** for **both pasteurized and raw milks** from **humans and cows** (slide 13).

Specific Testimony with Reference to Appended Slide Numbers

1. CDC Dataset for 2005-2020

The CDC dataset documents that of the total of 3,807 illnesses reported for fluid milk from 2005-2020, pasteurized milk was associated with 18 outbreaks, 2,111 illnesses, 32 hospitalizations, and 4 deaths, and raw milk was associated with 162 outbreaks, 1,696 illnesses, 170 hospitalizations, and 2 deaths reported in 37 of 50 U.S. states. See slides 5-7 and supplemental slide 20 for charts documenting these results.

2. Additional Data Sources

Additional data from the states of California (CA) and New York (NY) are presented in combination with the CDC data for raw milk outbreaks reported in these states from 2005-2020. Slides 8 and 9 provide data on trends in retail raw milk production from one CA dairy and CDC outbreak data (no outbreaks since 2016), as well as an estimate of risk at less than 1 illness in 20 million servings (250 mL), a very low risk. Slides 10 and 11 provide data on trends in NY state-licensed farms and CDC outbreak data (no outbreaks since 2014), similarly documenting increasing access without any increase in outbreaks or illness.

3. FDA/USDA Listeriosis Risk Assessment (2003)

The US Food and Drug Administration and the USDA Food Safety and Inspection Service (FDA/FSIS, 2003) conducted a Quantitative Microbial Risk Assessment (QMRA) for severe listeriosis in 23 ready-to-eat foods include both pasteurized and raw milk. Slide 12 provides estimates from the FDA/FSIS assessment, along with updated estimates from independent academic researchers (Latorre et al., 2011). Supplemental slide 21 provide the FDA/FSIS Summary Table documenting the results of the QMRA in estimated risk per serving (middle column) and per annum (right column).

FDA/FSIS predicted moderate to high risk for both pasteurized and raw milk. Notably, the independent researchers updated assessment predicted very low risk (2 cases in 1,000,000,000,000 exposures) for unpasteurized milk.

New research now available in 2024 would even further lower the estimated risks for unpasteurized milks. The summary table in Slide 15 illustrates results from pathogen testing programs for raw milk from 6 countries including the US. Overall percentage positive rates were $\leq 0.01\%$ for each of the four major pathogens of concern for raw milk, representing $\sim 8,000$ to 11,000 samples for each pathogen. The full table was published in Dietert et al. (2022), and the QR code for this study is provided on slide 13.

A recent pathogen growth study in raw milk that warrants your consideration was conducted by an independent certified laboratory (FSNS, 2022). Samples of raw milk inoculated with one of the four major pathogens of concern and stored for a week at the refrigeration temperature recommended by FDA and USDA (4.4°C or 40°F)

did not support growth of any pathogen (Slide 8). A manuscript based on the FSNS study (Coleman et al., 2023) documents suppression, not growth of pathogens, representing further reduction in the estimated risks for raw milk in the 2003 QMRA because FDA/FSIS had assumed growth at the same rate for raw and pasteurized milk in their model.

Slide 16 includes charts from the 2023 study (Coleman et al., 2023) documenting the invalid assumption of FDA/FSIS that the pathogen grew at refrigeration temperatures in raw milk. This study and Waller et al. (2024) further document the pro-pasteurization biases that underestimated risk of pasteurized milk and overestimated risk of raw milk.

This evidence is inconsistent with the common assumption that raw milk is inherently dangerous because it may contain pathogens when the reality for the 21st century is that detection of pathogens is uncommon and none of the pathogens contributing to raw milk illnesses grow in raw milk at stored at the proper temperature.

4. Risk Analysis Quality Test (RAQT) of the Society for Risk Analysis

The need for periodic reassessment of QMRAs as science advances is widely acknowledged, and the RAQT of the SRA provides a tool for independently assessing analysis quality. A peer-reviewed publication (Waller et al., 2024) and Slides 13 and 14 provide highlights of work applying the RAQT to the FDA/FSIS 2003 assessment that indicate the poor quality of this assessment for milkborne risk.

5. Pasteurized Milk Risk of Listeriosis from Systematic Review

The peer-reviewed study by Sebastianski et al. (2022) documented that **pasteurized milk** was associated with **significantly higher risks** of severe listeriosis and death than raw milk. The full reference is provided below.

6. Evidence Maps, First Simultaneous Consideration of Benefits and Risks

Slide 15 provides the QR codes for three extensively documented studies in a special collection of the journal *Applied Microbiology*. The available body of evidence is described in detail for breastmilk in Coleman et al., 2021 and for cow milk in Dietert and colleagues (2022).

The extensive body of scientific evidence available is inconsistent with the assumption that raw milk is inherently dangerous. On the contrary, the body of evidence supports raw milk with its dense and diverse natural microbiota (Oikonomou et al., 2020, supplementary slide 22) as a healthful food that is beneficial for children and adults.

Recommendation:

I urge the committee to consider the evidence presented herein (and described in detail in my peer-reviewed publications) and pass HAWAII HB 1989 so that consumers can choose real milk, fresh and unprocessed, complete with its natural beneficial microbiota illustrated in my supplemental slides.

Respectfully,

Margaret E. Coleman

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Acknowledgment: This testimony was prepared with financial support from the Weston A. Price Foundation.

Supporting Slides

Slide 5

CDC DATA ON MILKBORNE IN US (2005-2020)

(Stephenson et al., 2024. *J Epidemiology and Global Health*)

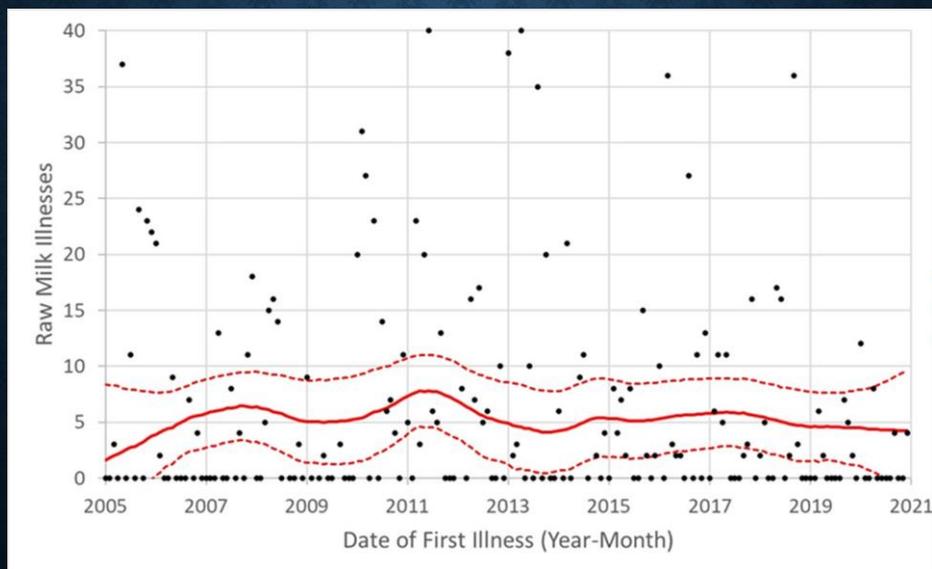
- **Fluid milk** contributed to burden of illness in US over this 16-year period:
3,807 illnesses
 180 outbreaks
 202 hospitalizations
 6 deaths

	Pasteurized Milk	Raw Milk
Illnesses	2,111	1,570
Outbreaks	18	162
Hospitalizations	32	170
Deaths	4	2

- **Campylobacteriosis** accounted for 90% of milkborne illness (3,443 of 3,807 illnesses). Of campylobacteriosis illnesses, 54% were associated with **pasteurized milk**
- **Significantly higher risk of listeriosis** from **pasteurized dairy** in a recent systematic review for North America (Sebastianski et al., 2022)

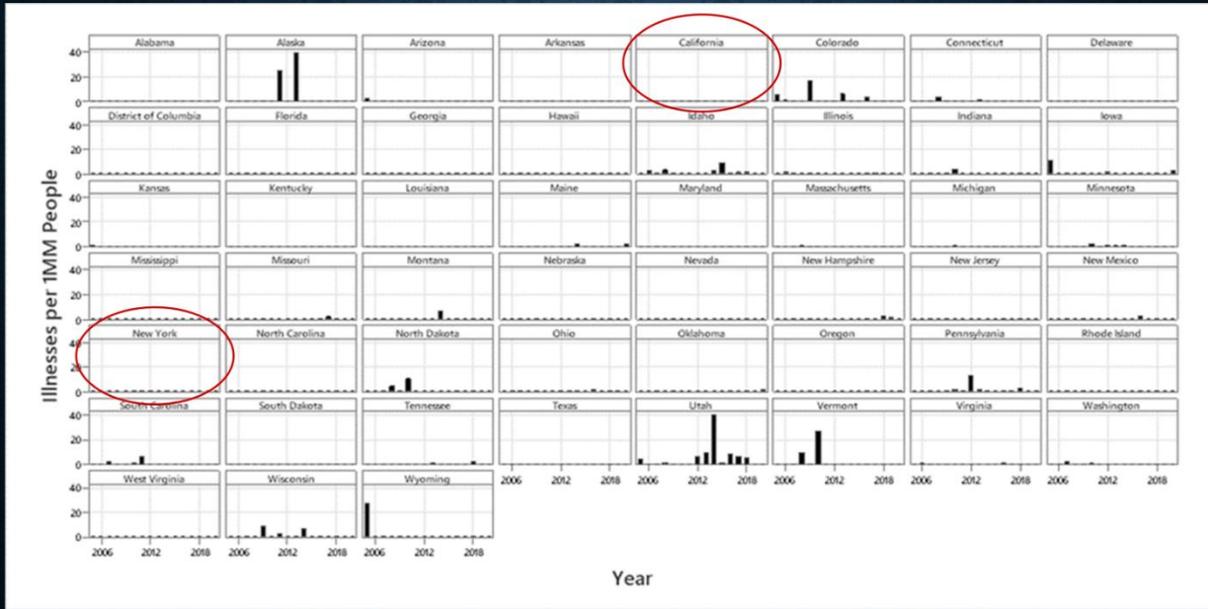
Slide 6

TRENDS OF RAW MILK ILLNESSES PER OUTBREAK NOT INCREASING



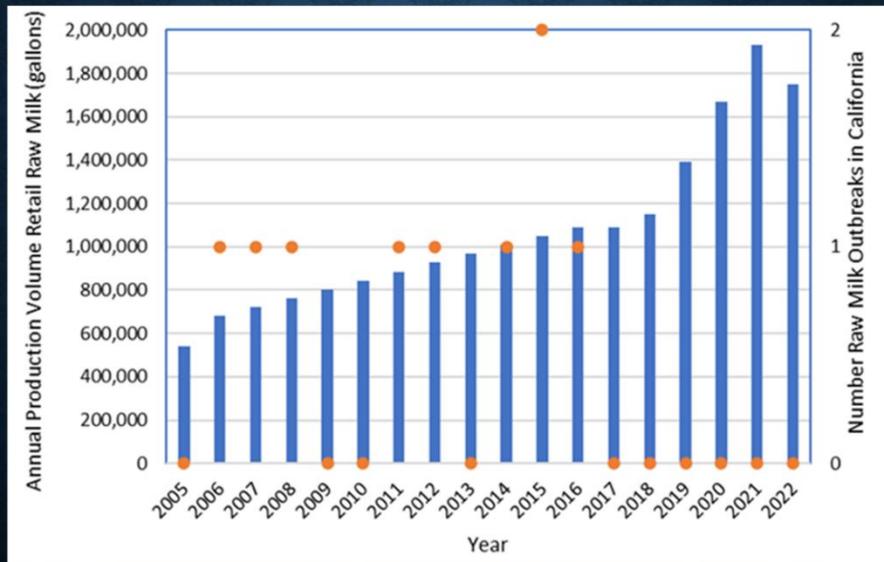
Slide 7

RATES OF ILLNESS BY STATE NOT INCREASING



Slide 8

NO ILLNESS INCREASE WITH INCREASING RETAIL RAW MILK PRODUCTION IN CA



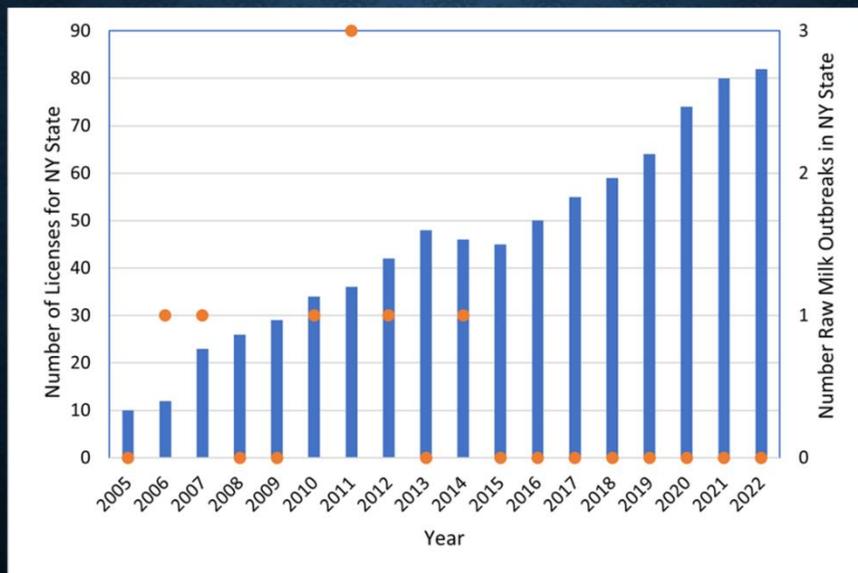
Slide 9

VERY LOW RISK ILLNESS FOR CA RETAIL RAW MILK

1. **Annual Production** from one California dairy
More than a **million gallons of raw milk** supplied to retail markets **annually**
2. CDC NORS outbreaks (2005-2020)
 - 9 California outbreaks in 16 years, **none since 2016**
 - 99 illnesses, 16 hospitalizations, 0 deaths
3. **~9 million gallons of retail raw milk** sold from 2017 to 2022, without an outbreak reported in California linked to raw milk consumption
4. **Risk estimate: <1 illness in 20 million servings**

Slide 10

INCREASING RAW MILK ACCESS IN NY STATE NOT INCREASING ILLNESS



Slide 11

NO RAW MILK ILLNESSES IN NY STATE IN PAST EIGHT YEARS

- CDC reported 8 outbreaks in NY State from 2005 to 2014
 - 58 campylobacteriosis illnesses, 4 hospitalizations, 0 deaths
- **No raw milk outbreaks** reported in NY state since **2014** despite increasing numbers of licenses for farms legally selling raw milk (data obtained by FOIA)

Slide 12

QUANTITATIVE MICROBIAL RISK ASSESSMENTS Estimated Risks for Listeriosis in Milks

FDA/FSIS (2003); update by independent researchers (Latorre et al., 2011)

Pasteurized Milk	Raw Milk	
<ul style="list-style-type: none"> • 90.8 deaths per year (high risk) • 10^{-9} per serving or 1 case in 1,000,000,000 exposures (moderate risk) 	<ul style="list-style-type: none"> • 3.1 deaths per year (moderate risk) • 7×10^{-9} per serving or 7 cases in 1,000,000,000 exposures (high risk) • $\sim 2 \times 10^{-15}$ per serving or 2 cases in 1,000,000,000,000,000 exposures (very low risk) 	<div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 10px;">}</div> <div> <p>FDA/FSIS</p> <hr style="width: 100%;"/> <p>Latorre</p> </div> </div>

Slide 13

SRA RAQT *beta* Testing of FDA/FSIS Assessment Evidence of Ideological or Political Bias (Waller et al., 2024)

Two foods estimated as **high risk** for listeriosis (milks) with **different management** recommendations lacking scientific justification

- **Raw milk** assigned “**priority candidate for continued avoidance**”
- **Pasteurized milk** assigned “**priority candidate for more study to confirm model predictions or identify factors not captured by current models that would reduce risk**”
- No consideration of alternatives to intentionally conservative assumptions
- No integration of risk management, little integration of risk communication
- No consideration of **societal costs** of interventions/**recalls** for foods that may **not pose high risk to consumers** (Farber et al., 2021)



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Slide 14

Risk Analysis Quality Test of the Society for Risk Analysis: ROOT CAUSES for Poor Quality of Raw Milk QMRAs?

Fear and Dread of Microbes as Killer Germs;
Unquestioned Unstated Assumptions, Speculations;
Ideology and/or Politics Tipping Science

1. **The source of microbes in raw milks is feces**
– Wu et al., 2019, 2022; Gomes et al., 2020
2. **Pasteurization is a ‘silver bullet’**
3. **Pasteurized milk is zero risk**
4. **Raw milk is ‘inherently dangerous’**



Waller et al. (2024) identified shortfalls in all 73 questions for microbial risk assessments and suggested root causes (ideology, politics, and science) that must be addressed to enable future Evidence-Based Risk Management 14

Slide 15

**PEER-REVIEWED
MANUSCRIPTS ON
BENEFITS AND
RISKS OF MILK
MICROBIOTA**



applied microbiology

an Open Access Journal by MDPI

Enhancing Human Superorganism Ecosystem Resilience by Holistically 'Managing Our Microbes'

Margaret E. Coleman; Rodney R. Dietert; D. Warner North; Michele M. Stephenson

Appl. Microbiol. 2021, Volume 1, Issue 3, 471-497





applied microbiology

an Open Access Journal by MDPI

Examining Evidence of Benefits and Risks for Pasteurizing Donor Breastmilk

Margaret E. Coleman; D. Warner North; Rodney R. Dietert; Michele M. Stephenson

Appl. Microbiol. 2021, Volume 1, Issue 3, 408-425





applied microbiology

an Open Access Journal by MDPI

Nourishing the Human Holobiont to Reduce the Risk of Non-Communicable Diseases: A Cow's Milk Evidence Map Example

Rodney R. Dietert; Margaret E. Coleman; D. Warner North; Michele M. Stephenson

Appl. Microbiol. 2022, Volume 2, Issue 1, 25-52

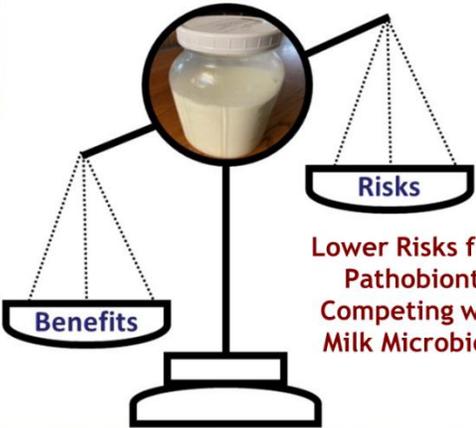


Slide 16

BENEFITS OUTWEIGH RISKS FOR RAW MILK MICROBIOTA




Microbiota-Laden Complete Food Benefits the Immune System, Reducing Risks of Illness



Lower Risks from Pathobionts Competing with Milk Microbiota

Dietert et al., 2022. Nourishing Human Holobiont to Reduce Risk of Non-Communicable Diseases: A Cow's Milk Evidence Map Example. *Applied Microbiology*

Coleman et al., 2023. Suppression of Pathogens in Properly Refrigerated Raw Milk. *PLOS ONE*

Slide 17

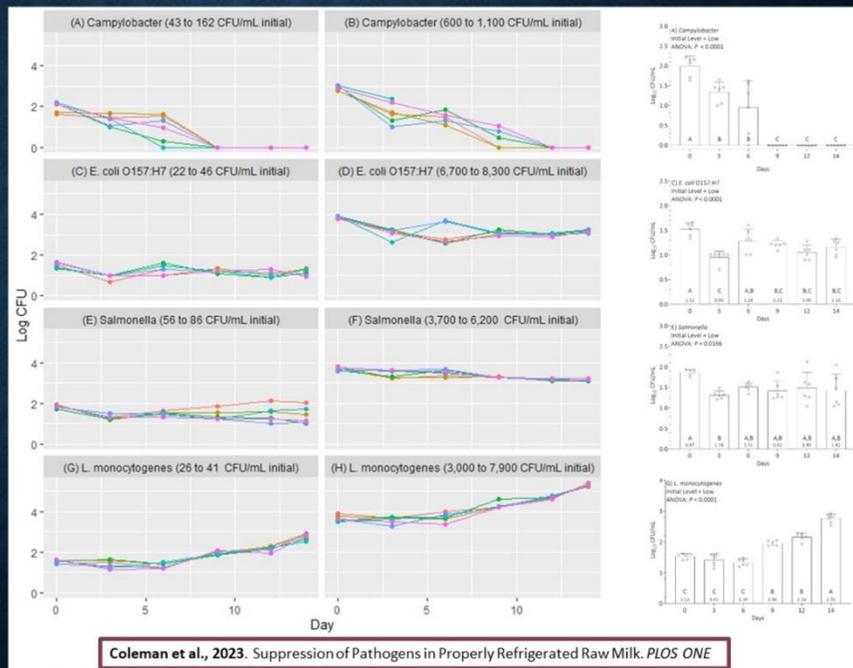
EXTREMELY LOW PERCENTAGE POSITIVES FROM RAW MILK MONITORING PROGRAMS IN US AND AROUND THE WORLD

Recent Results from Pathogen Testing for Raw Milk from 6 Countries	<i>Campylobacter</i>	<i>E. coli</i> O157:H7 or EHECs	<i>L. monocytogenes</i>	<i>Salmonella</i>
PERCENTAGE POSITIVE	93/9,740 (0.01%)	26/10,934 (<0.01%)	40/9,118 (<0.01%)	14/7,976 (<0.01%)

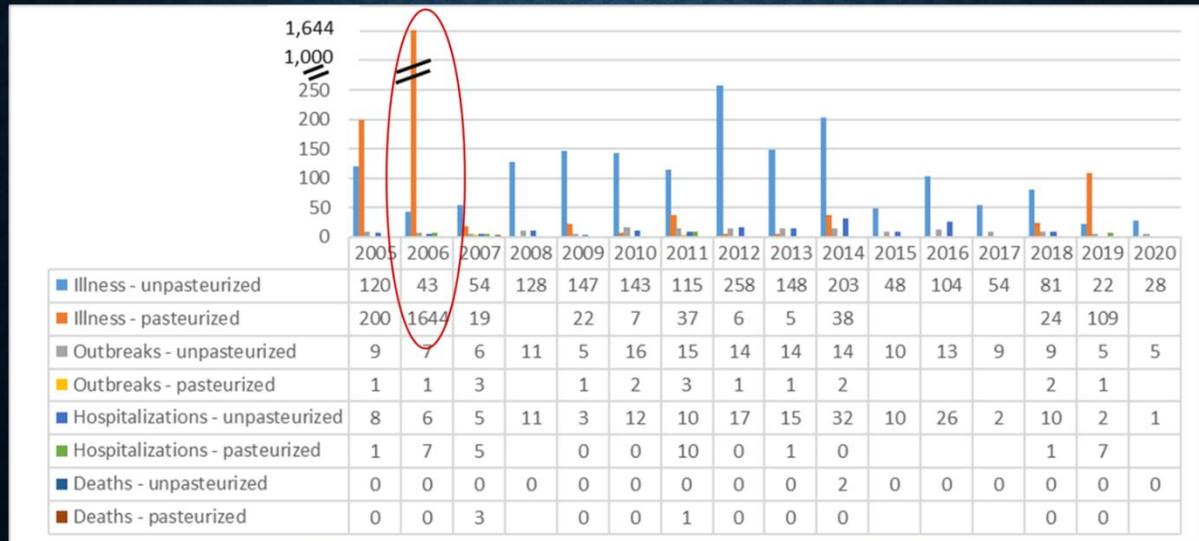
From Table 1 in peer-reviewed publication by Dietert and colleagues (2022)

Slide 18

PATHOGEN SUPPRESSION IN RAW MILK



TRENDS OF MILKBORNE ILLNESS (CDC, 2005-2020)

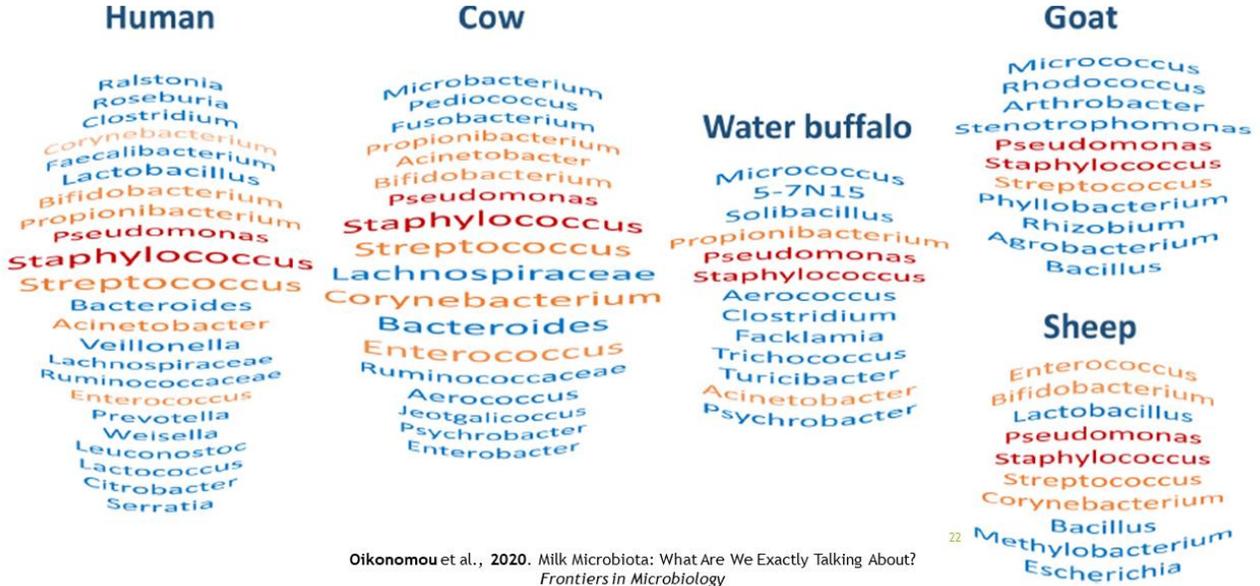


FDA/USDA Listeriosis Risk Assessment (Summary Table 1, 2003)

- RESULTS:**
Pasteurized AND Raw Milk
High Risk
- Only simulated servings containing very high levels (>10,000 pathogen cells per serving) associated with illness

Relative Risk Ranking	Predicted Median Cases of Listeriosis for 23 Food Categories			
	Per Serving Basis ^a		Per Annum Basis ^b	
	Food	Cases	Food	Cases
1	Deli Meats	7.7x10 ⁻⁸	Deli Meats	1598.7
2	Frankfurters, not reheated	6.5x10 ⁻⁸	Pasteurized Fluid Milk	90.8
3	Pâté and Meat Spreads	3.2x10 ⁻⁸	High Fat and Other Dairy Products	56.4
4	Unpasteurized Fluid Milk	7.1x10 ⁻⁹	Frankfurters, not reheated	30.5
5	Smoked Seafood	6.2x10 ⁻⁹	Soft Unripened Cheese	7.7
6	Cooked Ready-to-Eat Crustaceans	5.1x10 ⁻⁹	Pâté and Meat Spreads	3.8
7	High Fat and Other Dairy Products	2.7x10 ⁻⁹	Unpasteurized Fluid Milk	3.1
8	Soft Unripened Cheese	1.8x10 ⁻⁹	Cooked Ready-to-Eat Crustaceans	2.8
9	Pasteurized Fluid Milk	1.0x10 ⁻⁹	Smoked Seafood	1.3
10	Fresh Soft Cheese	1.7x10 ⁻¹⁰	Fruits	0.9
11	Frankfurters, reheated	6.3x10 ⁻¹¹	Frankfurters, reheated	0.4
12	Preserved Fish	2.3x10 ⁻¹¹	Vegetables	0.2
13	Raw Seafood	2.0x10 ⁻¹¹	Dry/Semi-dry Fermented Sausages	<0.1
14	Fruits	1.9x10 ⁻¹¹	Fresh Soft Cheese	<0.1
15	Dry/Semi-dry Fermented Sausages	1.7x10 ⁻¹¹	Semi-soft Cheese	<0.1
16	Semi-soft Cheese	6.5x10 ⁻¹²	Soft Ripened Cheese	<0.1
17	Soft Ripened Cheese	5.1x10 ⁻¹²	Deli-type Salads	<0.1
18	Vegetables	2.8x10 ⁻¹²	Raw Seafood	<0.1
19	Deli-type Salads	5.6x10 ⁻¹³	Preserved Fish	<0.1
20	Ice Cream and Other Frozen Dairy Products	4.9x10 ⁻¹⁴	Ice Cream and Other Frozen Dairy Products	<0.1
21	Processed Cheese	4.2x10 ⁻¹⁴	Processed Cheese	<0.1
22	Cultured Milk Products	3.2x10 ⁻¹⁴	Cultured Milk Products	<0.1
23	Hard Cheese	4.5x10 ⁻¹⁵	Hard Cheese	<0.1

Mammalian Milk Microbiota NOT Fecal Contamination! Shared Microbes in Breastmilk and Ruminant Milks



Oikonomou et al., 2020. Milk Microbiota: What Are We Exactly Talking About?
Frontiers in Microbiology

HB-1989-HD-2

Submitted on: 3/8/2024 6:15:31 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
B.A. McClintock	Individual	Support	Written Testimony Only

Comments:

I was raised on a farm drinking raw milk. I'm now 75. Please release these restrictions. Please support this bill. Mahalo.

HB-1989-HD-2

Submitted on: 3/8/2024 8:11:52 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Nancy Redfeather	Individual	Support	Written Testimony Only

Comments:

I stand in support for HB1989 HC2.

I have been privileged to hear the story of milk coming to Hawaii from mainland dairies. It appears that milk sold in Hawaii has been pasturized 2-3 times in route to it's final destination which is a carton in our supermarkets rendering the quality of the milk very low. Milk can be an extremely nutritious food especially for our children and young adults, but the milk we are currently drinking is of questionable nutritional quality. The "live" quality of milk which makes it such a healthy drink is deadened by the extreme heat. Also, since there are very few cows left in Hawaii to even milk, why not allow people who want to drink nutritious raw milk the chance to do so. Why keep this nutritious food from those who may need it? Support for the sale of raw milk has been championed my whole lifetime and still for some reason the Health Department continues to speak against sale. Perhaps this is the year that will change.

HB-1989-HD-2

Submitted on: 3/8/2024 11:08:15 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Makalapua	Individual	Support	Written Testimony Only

Comments:

I support this bill.

HB-1989-HD-2

Submitted on: 3/9/2024 1:41:36 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Cheryl Reilly	Individual	Support	Written Testimony Only

Comments:

The consumption of whole, raw & natural food is & should always be the right of any individual- not to mention all the great health benefits that follow this lifestyle. Being able to consume of pure raw milk coming straight from its source, should always be a privilege to any persons own choosing & is his or hers own personal right. In conclusion I willingly support the HB1989. It is of utmost importance to my family and I.

HB-1989-HD-2

Submitted on: 3/9/2024 5:54:52 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Julie Toulon	Individual	Support	Written Testimony Only

Comments:

I fully support the sale and production of raw milk and milk products in a Hawaii. Hawaii needs more small farms, more local food production and freedom to choose our food sources. raw milk can be a great food source and is not anymore dangerous then lettuce.

HB-1989-HD-2

Submitted on: 3/9/2024 12:54:03 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Jacqueline S. Ambrose	Individual	Support	Written Testimony Only

Comments:

Aloha,

Yes to authorizing and decriminalizing the sale of raw milk, raw milk products, and raw milk dairy products directly from producers to consumers for human consumption, subject to certain restrictions. Authorizes the direct sale of raw goat milk for pet consumption. Establishes labeling requirements. Requires the Board of Agriculture and Department of Health to adopt rules no later than 7/1/2025

HB-1989-HD-2

Submitted on: 3/9/2024 5:08:43 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Andrea	Individual	Support	Remotely Via Zoom

Comments:

I SUPPORT THIS BILL,

RAW MILK SHOULD BE AVAILABLE FOR FARMERS TO SELL DIRECTLY TO CONSUMERS, ALSO AS A SAFETY THIS SHOULD BE FOR FARMERS WITH 5 DAIRY COWS OR LESS.

WITH NO DOH INVOLVE

IF THE FARMERS HAS MORE THAN 5 DAIRY COWS I AGREE DOH SHOULD BE INVOLVE

THANKS TO RAW MILK MY HEALTH HAS IMPROVED AND I FOUND IM NOT LACTORE INTOLERANT.

IN MEXICO WE GREW UP WITH RAW MILK AND NEVER GOT SICK.

RAW MILK IS IMPORTANT FOR US, DO NOT TAKE IT AWAY FROM US

HB-1989-HD-2

Submitted on: 3/12/2024 12:23:01 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Hubert Karreman	Individual	Support	Remotely Via Zoom

Comments:

Hello Hawaii State Senate,

I'm a large animal veterinarian since 1995 who has specialized in dairy animals, starting as a herdsman with dairy goats and then moving on to cows in the mid-1980's, and then as a veterinarian for about 100 certified organic dairy herds in Pennsylvania and now as a dairy farm owner of 75 Jerseys here in North Carolina. I am a Farm Bureau member, a member of the American Association of Bovine Practitioners and am a Charter Fellow of the American College of Veterinary Botanical Medicine. By working primarily with certified organic dairy farmers, I've pioneered the non-antibiotic treatment of infectious disease in dairy cattle and have spoken on the topic around the world. As a veterinarian, I will keep my comments primarily geared to the pet milk aspect of the bill.

It's not rocket science to say that raw milk is basic to mammalian biology: *all* 4-legged mammals, (and even 2-legged mammals), drink unpasteurized milk when young and suckling the mother. Its constituents are easily recognized by the digestive tract whereas pasteurized milk proteins become denatured and appear foreign to the digestive tract, causing intestinal upset. Indeed, pasteurized milk is a well known primary allergen. However, cats and dogs fed raw milk do not get diarrhea like those same animals that drink pasteurized milk when consuming equal amounts of milk. Diarrhea is often a sign of inflammation of the gut. Pocket pets like hamsters, gerbils, mice and rats will have rougher hair coats when fed pasteurized milk compared to being fed raw milk because the vitamin B6 content in raw milk is higher due to not being denatured by pasteurization. Goat milk is an excellent source of Vitamin A which is very important for good vision. And goat milk comes from the doe already pre-homogenized, which can be very important for some mammalian digestive systems.

Why talk about the digestive system? Because our immune system depends on proper digestion for optimal efficiency. Denatured / foreign substances (due to proteins that are pasteurized and other processed foods) are looked at as foreign by the body and literally bad biochemical reactions are the outcomes. The bad biochemical reactions cause gut inflammation, which is the root of so many illnesses of both pets and people. If recurrent, inflammatory bowel disease will result with signs of bloatedness and diarrhea. This is well known and clinical disease manifestations are seen by many veterinarians and human doctors.

I would urge you to allow people to have a choice if they want to give their pets' raw milk or pasteurized milk. I don't know any animals that get pasteurized milk, but then again as a dairy

farmer I only give raw milk to the cats and dogs we have as well as to livestock as needed. And remember that a lactating female's first milk, known as colostrum, is *never* pasteurized as it would diminish and ruin its biological value. The same goes for milk produced during the rest of lactation.

Interestingly, veterinary and human medicine so often focuses only on pathogens: Find a bug and treat it is the backbone of the modern medicine. Yet interestingly, pure raw milk, made well, is highly nutritious and has medicinal qualities. Pure, raw milk is completely accepted by the digestive tract because it is 100% complementary to any mammal (everything said about animals above applies to people as well).

Understandably, people are given higher standing than pets and livestock. So by all means, go ahead and set up standards for testing raw milk. Interestingly, did you know that production of medicinal grade raw milk was overseen by local medical boards beginning in the 1890's? They set up standards for Certified Raw Milk. Doctors knew that patients, especially infants, needed the high-quality nutrition of such milk. The last Medical Milk Board existed until the 1970's. Set up a Hawaii Medical Milk Board for raw milk - that would be a true benefit to public health.

In closing, a mammal's closest connection to its original source of life, its mother, is through colostrum and then subsequent raw milk - suckled or freely drank. Clean, well-kept, well-fed cows and goats milked by modern hygienic standards produce healthy milk. All animals I've known have thrived on raw milk. Please allow the natural design of mammals to be honored and enhanced by allowing medicinal grade pure raw milk in Hawaii.

Aloha Committee Chairs and Members,

Please Support HB 1989, The Raw Milk Bill. Thank you for this opportunity to submit supportive testimony.

I am a small scale food producer that, with my family, have run a farm that feeds us and provides a small amount of produce that we sell on the Big Island. It is my desire to expand opportunities in farming so that young people, such as my children, will have greater economic possibilities to remain on the farm. It is also my desire to see sustainable, healthy food to become more abundant in our state. To achieve those goals, I urge the passage of HB 1989 and the decriminalization of the direct sale of raw milk to informed consumers.

There are three parts to my testimony, I will be as brief as possible:

1. Response to Public Health Concerns
2. Personal Choice and Food Sovereignty
3. Agricultural Diversification and Food Security

Response to Public Health Concerns

A Raw Milk Bill was passed through the House (HB 521) in 2023. It did not pass in the Senate. In 2023, the Hawaii State Department of Health (DOH) has submitted an 11 page document opposing HB 521. Almost half of this statement (pages 4 to 9) are under a section called "Raw Milk Misconceptions and the Danger of Raw Milk Consumption." In my opinion, their efforts to "debunk" statements that others have made about the benefits of raw milk is not relevant to the decision to decriminalize raw milk. Concerns about "Dangers of Raw Milk Consumption" is relevant.

It is my position that the data of incidents of food borne illness, presented by DOH, do not show significant elevated risk compared to consuming the pasteurized milk that is in fact available in Hawaii's supermarkets. I will here present published, peer-reviewed scientific evidence that the pasteurized milk available in Hawaii's supermarkets is of low quality and does not meet the regulatory standards for bacterial content set by FDA.

Outbreaks of Illness From Raw Milk are Few

The DOH, citing CDC and FDA records, states 133 outbreaks of illness attributed to consumption of raw milk nationwide, in the 23 years between 1987 and 2010. I think this is not a worrisome level of outbreaks compared to large nationwide outbreaks of food poisoning that occur every year from commercially produced foods such as hamburger, cantaloupe and sprouts. I note that not every case of food poisoning is known, especially when the symptoms are mild. I also believe that there is a bias against raw milk such that all cases of food poisoning in people that drink raw milk will be presumed to be caused by the milk.

HB 1989, the 2024 bill now under consideration, mitigates against large scale outbreaks of illness. The bill allows milk from no more than 10 cows to be sold from a single farm. This will limit the likelihood of a large outbreak. Second, the bill requires a warning label on containers stating, "Contains pathogens that may be unsafe to consume" and that milk can only be sold directly from the farm. Purchasers of raw milk will have to make a deliberate effort to contact a dairy farmer and will be warned of the danger that DOH asserts they face.

Pasteurized Milk in Hawaii's Supermarkets Does Not Meet Regulatory Standards

Researchers at the University of Hawaii found that at 5 days prior to the expiration date, 90% of samples from processed mainland milk and 80% of samples from locally processed milk had bacterial counts higher than the legal limit set by the FDA. This study was published by Pacific Agriculture and Natural Resources, a peer-reviewed, scientific journal. I note that it was published in 2010, the same year as most of the data in the DOH testimony about incidences of food borne illness from milk. Need I say more? It is a disservice to the people of Hawaii for the legislature to maintain the illusion that processed foods are always safer than fresh, locally produced foods.

The abstract of the article is below. The full article can be accessed with this link <https://hilo.hawaii.edu/panr/writing.php?id=278>

Microbiological Quality of Pasteurized Milk in Hawaii HONGFEI HE, YONG LI*, ALFRED L. CASTRO, JIN DONG and C. N. LEE* Department of Human Nutrition, Food and Animal Sciences, 1955 East-West Road University of Hawaii at Manoa, Hawaii 96822 USA

Abstract: Complaints of spoilage of pasteurized milk purchased from Honolulu groceries highlighted the need to address the emerging milk quality issues for the consumer's consumption. The objective of this study was to evaluate the microbiological quality of pasteurized milk available in Hawaii's market. Bacterial counts of different types of milk samples (imported-M, locally produced-L and imported organic-O) were compared during refrigerated storage. Imported bulk milk from mainland are re-pasteurized in Hawaii and packaged under different brands. Hawaii locally produced milk are marketed with the "Island Fresh" label. The expiration or sell by date is based on the pasteurization. Imported organic milk from the mainland were prepackaged and shipped by air freight. At 5d before the expiration date, 70% of the mainland samples and 62% of the local samples had aerobic bacteria count exceeding the regulatory limit of 20,000 cfu/ml for grade 'A' pasteurized milk set by the United States Food and Drug Administration (FDA). Local raw milk samples from the farms supplying the processor were examined and results indicated good microbiological quality. High levels of psychrotrophic bacteria were identified as a major contributor to the pasteurized milk spoilage before the expiration date. The implications of this study were further discussed.

Personal Choice and Food Sovereignty

Up to this point I have been rebutting the negative comments from the DOH. What I really want to be talking about is the positive aspect of decriminalization of raw milk. "Food Sovereignty" can mean several things. The inherent right of individuals to produce food for their families, the right of a

community to produce and distribute food, and certainly the right of sovereignty over one's own body. All of our supermarkets have aisles of beer and liquor and shelves of tobacco products. Everybody knows these substances can be very injurious to our health. The stores are also filled with foods high in sugar and salt. It is well established that these foods lead to diabetes, hypertension and other serious disease. Supermarket foods often contain additives and are low in healthy nutrients. Why are stores allowed to sell these things? Because the consumption of such items is considered a matter of free choice by the buyer.

Milk is not injurious like these items and, also unlike these items, fresh, unadulterated milk cannot be legally bought and sold. I think people should be allowed to make their own decisions about the purchase of milk, too.

My wife has always said that marijuana would be legal before milk. Please prove her wrong!

Agricultural Diversification and Food Security

85-90% of Hawaii's food is imported. Nearly all of our milk is imported. Food security, food insecurity, resilience and sustainability are all phrases we hear and are incorporated in the mission statements of many of our agencies and institutions. Allowing small farmers to produce and sell small amounts of milk will help decentralize milk and food production. But it will do much more!

The decriminalization of milk could be a game changing event for the very many young people (and some of us not-so-young people) that want to live and make their living on the land. Hawaii, and especially the Big Island, has a large amount of under-utilized grazing lands. Many of these were once sugarcane fields that have not been converted to other viable agricultural uses. Grazing is the most appropriate use for much of this land which has been depleted and would be subject to soil erosion, if tilled.

Where I live in Hamakua, in addition to the sugar plantations, many ranching families own, or did own, viable ranches and livestock farms of several hundred acres. There were numerous small, commercial dairies. With the passing of the generations, many farms were divided among the heirs and now there are many parcels of 20 or maybe 50 acres. These farms are not large enough for a viable beef cattle ranch. In too many cases, the descendants of these ranching families will sell their holdings and in too many cases they become "gentleman farms" with a few sheep or steers to maintain agricultural assessments for the property tax, thus contributing nothing to the community.

I know many young people growing vegetable and other crops trying to make a living. The return on all this hard work is meager without capital and the ability to hire workers. Yet, many of our people are joyfully dedicated to making a go of it. Raw milk is a high value product. A quick search of the internet shows legal raw milk prices of \$16 a gallon and more, such as \$12 or a quart of raw milk yogurt. A couple of milk cows could supply a young family with an income stream that would make the farm economically viable. If milk sales were legal here.

Decriminalization of raw milk will help young farmers stay on the farm. It will develop agricultural capacity at the community level. It will help preserve and increase in our people the traditional knowledge and skills of livestock husbandry and milk production. Grazing is very suited to our under-utilized grasslands and is an alternative superior to confinement dairies with serious environmental waste disposal problems.

In Conclusion

The milk cow is said to be the heart of a small farm. She feeds the family. Excess milk can be fed to pigs and chickens and is used by Korean Natural farmers to make many of their soil amendments. And if it were legal, it would make a badly needed cash income for hardworking farmers.

Finally, I want to tell you that I have been drinking raw milk from the Big Island for 40 years. I will not hesitate to state my opinion that fresh milk is far superior in flavor. We say it tastes like melted ice cream, not like the cardboard carton or the plastic jug that store milk comes in! Thank you for reading my testimony.

Grant Gerrish, Ph.D

Instructor of Biology UHH (retired)

HB-1989-HD-2

Submitted on: 3/12/2024 12:44:44 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Hattie Gerrish	Individual	Support	Remotely Via Zoom

Comments:

Aloha Chairs Sanbuenaventura and Gabbard and members of the Senate,

I strongly support HB 1989 because I support legalizing some form of raw milk sales. Hawai`i is one of the last places in this country that does not permit people to buy and sell raw milk, and I think opposition to raw milk is misplaced.

I am a lifelong resident of Hawai`i and a farmer with personal experience milking cows and raw dairy, and this bill is very important to me. This bill would permit direct farm to consumer sales of raw milk from farms with no more than ten milking cows. The bill also contains a lot of new language on proposed rules for milk testing and record keeping to ensure that the milk is safe and food grade. The bill has passed the House three years in a row, and this year I am hoping you will do your part to help it become law.

If raw milk can pass the food safety tests required in the bill, then it is safe and there is no logical argument to continue to ban sales.

Saying raw milk is a public health problem that especially threatens schools is a faulty argument. I read the CDC, Mayo Clinic, and Consumer Reports websites. Raw milk is harmless on its own, but like all other foods it can be contaminated by outside sources. The pathogens that could get into the milk and cause illness are the same ones that cause food borne illness in other foods, from hamburger meat to romaine lettuce. Every year there are outbreaks of illness connected to legal foods, so if these food borne illnesses were a special problem for schools, our schools would be swamped with cases already. Furthermore, most states have legal raw milk and I am not hearing about mass outbreaks related to raw milk on the news.

I have been milking cows and drinking raw milk for 30 years and never gotten sick from it. I think we know how to do this right. During that same 30 years, I had a bad reaction to store bought pasteurized milk that led my doctor to recommend I go back to raw milk, I got sick from contaminated cut melon, and my mother got sick from contaminated peanuts. I noticed that the legislature never tries to ban all the foods that have caused illness. The legislature does not ban raw fish, which sometimes causes illness, because people in Hawai`i love raw fish.

Please stop singling out raw milk for this unfair and inconsistent treatment. Let informed consumers make their own choices. I'm not asking for raw milk at an industrial scale. Just let me sell it to my neighbors, who keep asking.

Mahalo

HB-1989-HD-2

Submitted on: 3/12/2024 12:59:42 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Sharon Gerrish	Individual	Support	Remotely Via Zoom

Comments:

Thank you all for hearing this bill

I have been milking my cows since 1978 and this has supplied my family with butter, milk, yogurt kefir and cheddar cheese. I have often had people asking for it. I am asking that you decriminalize raw milk and allow the restrictions passed in the House to apply.

When you think of the 40,000 gun deaths , 480,000 smoking deaths, and 178,000 alcohol deaths every year from these legal things asking that tested raw milk is not asking too much to be made legal.

I strongly urge that this bill pass.

sharon

HB-1989-HD-2

Submitted on: 3/9/2024 8:19:25 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Kaiulani Bowers	Individual	Support	Written Testimony Only

Comments:

I very much support this bill. Raw milk is completely natural and its health benefits are tremendous. That fact that we can purchase it legally makes zero sense. Decriminalize the selling/purchasing of raw milk to help people be healthier.

HB-1989-HD-2

Submitted on: 3/10/2024 9:17:42 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Sarah Resor	Individual	Support	Written Testimony Only

Comments:

I support the sale of raw milk from directly from farmer to consumer. I would love to know where and who my milk comes from.

The health benefits of raw dairy greatly outweigh pasteurized dairy. There are many studies that prove this. Please don't force us to keep drinking dead food that's currently sold in stores. Fresh raw dairy directly from farmers is so much more nourishing to our bodies and also tastes better!

Please keep raw milk accessible to those who at least want that option. A local source of clean, pasture-fed raw cows milk (and goat!) is the way to go. Our islands have passionate farmers who are ready and able to fulfill that need! Let's support them!

HB-1989-HD-2

Submitted on: 3/11/2024 1:38:44 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Ashlie McGuire	Individual	Support	Written Testimony Only

Comments:

I support the sale of raw milk and dairy products

HB-1989-HD-2

Submitted on: 3/11/2024 2:19:50 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Makana L	Individual	Support	Written Testimony Only

Comments:

Members of the AEN/HHS joint committee-

Aloha! I am in FULL SUPPORT of HB1989 HD2 Relating to Raw Milk- specifically Section 5, which would allow raw goat milk to be sold for pet consumption. Please allow pet parents to have the freedom to choose to locally purchase this excellent source of natural nutrition that raw goat milk provides. My dogs have seen the benefits of drinking raw goat milk in extra hydration & when they feel sick and don't want to eat much, it is a great source of nutrients until their appetites return to normal. I personally have never tried raw milk myself, but know people who do, and they have only benefited health-wise from consuming it & have never gotten sick. Should a human choose to drink raw goat milk that is specifically labeled for pet consumption only, hey it's their choice, but please don't deny the pets in Hawai'i and their owners the right to have the choice to buy raw goat milk.

Please support and pass HB1989 HD2.

Mahalo for your time!

-Makana L

HB-1989-HD-2

Submitted on: 3/11/2024 3:36:13 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Wai'ala Ahn	Individual	Support	Written Testimony Only

Comments:

I support the decriminalizing and authoritarian of Raw milk sale/production/distribution. Farmers and consumers should not be micromanaged, prosecuted and in fear for their own sovereign dietary choices. Please support this bill. Mahalo.

HB-1989-HD-2

Submitted on: 3/11/2024 4:02:52 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Lana Mitsumura	Individual	Support	Written Testimony Only

Comments:

I support this bill- we need to be able to access raw milk from Real People/farmers; like our previous generations have. In doing so, we support our community and our health. It's a symbiotic relation in our communities

HB-1989-HD-2

Submitted on: 3/11/2024 5:08:39 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Lauren Marumoto	Individual	Support	Written Testimony Only

Comments:

Aloha,

I am in support of of HB1989 HD2 relating to the Raw Milk bill - specifically Section 5, which would allow raw goat milk to be sold for pet consumption. Please allow pet parents to have the freedom to choose to purchase this excellent source of natural nutrition for their pets. From personal experience, my two cats have benefitted greatly from raw goat milk, as it has boosted their immune systems and allowed them to be healthy and strong. Please allow the pets of Hawaii to have access to raw goat milk, as well as allow the owners to purchase this for their pets from local pet supply stores.

Mahalo,

Lauren Marumoto

HB-1989-HD-2

Submitted on: 3/11/2024 6:01:40 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Leycia Tabajunda	Individual	Support	Written Testimony Only

Comments:

I support raw milk. Raw milk is healthy & alive. If there's anything we could use more of today it's better health.

Raw milk contains enzymes that are activated in the digestive tract and help digest the many components in milk. Raw milk from healthy cows and goats who graze on grass and soak up lots of good sunshine is a much better source of vitamins A, D, and K than milk from factory-farmed cows.

We should have a choice on whether we want to purchase pasteurized or raw milk at our own discretion.

Thank you

Leycia

HB-1989-HD-2

Submitted on: 3/11/2024 7:32:42 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
natalie forster	Individual	Support	Written Testimony Only

Comments:

I prefer raw milk over pasteurized and would like to support local farmers and be able to purchase raw milk and raw milk products from them. This could provide another revenue stream for farmers. This could also fill a gap in the lack of supply of locally produced milk and milk products available in Hawaii.

HB-1989-HD-2

Submitted on: 3/11/2024 7:27:36 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Alexa Helge	Individual	Support	Written Testimony Only

Comments:

I support HB1989 and the legalization of raw milk.

HB-1989-HD-2

Submitted on: 3/11/2024 10:30:16 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Ramona Hussey	Individual	Support	Written Testimony Only

Comments:

I strongly support HB1989 HD2 which would allow for the production and sale of raw milk. I am one of those consumers who would prefer to drink my milk raw from a local farm or dairy, without the heavy processing which regular dairies are required to do. When it's available - usually on the Big Island -- I go out of my way to purchase and drink locally produced raw milk. To my mind, this is a freedom of choice issue, and important for my personal health. To deny consumers the right to purchase locally produced raw milk on the basis of safety and health issues is just wrong. Humankind has been drinking milk straight from the cow for thousands of years. Clearly it can be done safely.

I urge your support for this straight-forward bill authorizing the sale and consumption of healthful raw milk.

HB-1989-HD-2

Submitted on: 3/11/2024 10:10:49 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Erin Mersch	Individual	Support	Written Testimony Only

Comments:

Hello. My name is Erin Mersch and I recently moved to the beautiful island of Hawaii. Before I moved here I lived in Kentucky where I drank raw milk consistently for over a year. I had issues with my stomach when consuming processed dairy and was mostly dairy free for years, until I found raw milk from a local farmer in Kentucky. It completely changed my gut health and I was able to enjoy dairy in so many ways that I was afraid to for years. We claim to have freedom in this country - freedom to decide what is best for ourselves and our family, freedom to decide what to put in and on our bodies, freedom to do as we choose as long as we cause no harm to anyone else. To be able to support local farmers and be able to purchase a natural product from an animal that farmer raises is our right in so many ways. Even if there is a slight health risk due to bacteria, that is ALWAYS a risk. In everything we do. Drinking is legal. Smoking is legal. To tell me I cannot buy raw milk if I CHOOSE to is completely unnecessarily stripping me of a freedom that I have a right to choose. I sincerely hope you pass this bill and decriminalize the sale of raw milk so people like me can choose to do what's best for myself. Thank you.

HB-1989-HD-2

Submitted on: 3/12/2024 7:18:27 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Joy Dettling	Individual	Support	Written Testimony Only

Comments:

I support the decriminalization of raw milk sales. Myself, my family and many others I know have been drinking raw milk for decades. I have found raw milk to be a health promoting product and believe that each individual should have the freedom to choose what they want to buy and consume.

HB-1989-HD-2

Submitted on: 3/12/2024 7:38:29 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Glen Kagamida	Individual	Support	Written Testimony Only

Comments:

SUPPORT.

MAHALO!

HB-1989-HD-2

Submitted on: 3/12/2024 8:22:20 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Cadence Feeley	Individual	Support	Written Testimony Only

Comments:

I strongly support HB521 to decriminalize direct farm to consumer sales of raw milk. We must support our local farmers and local food movement. We are in Ka'ū on the Big Island and want to see our farmers thrive and not be criminalized for raw milk.

Mahalo,

Cadence Feeley

HB-1989-HD-2

Submitted on: 3/12/2024 11:20:53 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Maia	Individual	Support	Written Testimony Only

Comments:

I'm in support of this bill. Please pass it so that those of us who want raw milk can get it. Thank you for your support!

HB-1989-HD-2

Submitted on: 3/12/2024 11:26:18 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
glenn oshiro	Individual	Support	Written Testimony Only

Comments:

Aloha!

HB1989 is an opportunity to present options of milk and milk products to the Hawaii consumer. It opens the avenue for the Hawaii farmer to diversify small farm products. It's local.

Raw milk is safe thanks to understanding issues affecting milk consumption. Local small farmers can produce desirable local product. I repeat, it's safe

Please move HB 1989 along. Thank you

HB-1989-HD-2

Submitted on: 3/12/2024 12:48:46 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Robert Culbertson	Individual	Support	Written Testimony Only

Comments:

Aloha Senators!

Please pass HB1989 HD2. This legislation helps open up our domestic food supply even as shipping options for specialty dairy becomes more costly and scarce.

Help our local farmers!

Mahalo nui loa!

R A Culbertson

Honokaa

HB-1989-HD-2

Submitted on: 3/12/2024 12:59:28 PM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Jonathan Dworkin	Individual	Support	Written Testimony Only

Comments:

I am writing as a private citizen. I support pasteurization as a clear standard for food safety, but I don't support criminalizing small farmers doing direct sales of their products, especially if there are clear labeling standards.

We allow a number of potentially dangerous items to be sold in the state, including alcohol, tobacco, firearms, and raw seafood. The difference is that these items have powerful corporate sponsors, and small farmers do not.

The threshold for criminalizing an activity should be high, and barring a major emergency (e.g. pandemic), the government should stay out of the private lives of citizens. Thank you.

HB-1989-HD-2

Submitted on: 3/13/2024 7:35:00 AM

Testimony for AEN on 3/13/2024 1:02:00 PM

Submitted By	Organization	Testifier Position	Testify
Esther Arkfeld	Individual	Support	In Person

Comments:

My name is Esther Arkfeld. Thank you for allowing me to testify. I would like to ask you to support this bill. I own and operate a small raw milk dairy in Iowa. Until last year the distribution of raw milk was considered illegal in our state. We worked 17 long years to change the law in our state. Last year we finally passed a law that would allow farm-to-direct-consumer sales. Since then, things have gone well here. Our bill language is very similar to the bill proposed here. This includes safety measures such as bacteria testing of the milk and health testing of the animals.

Raw dairying is not some dirty, unsafe practice. While this may have been true back in the 18th and 19th century this isn't necessarily the case in our 21st century. Just like commercial dairying has progressed in leaps and bounds, so has the practice of raw dairying. People who choose raw dairy aren't ignorant or uneducated. Most people who choose raw dairy have done a significant amount of research. When they choose to make a separate trip to a farmer, they do it for good reason.

I would like to share some statistics. 46 of the 50 states within our great country allow access the raw milk one way or another. All top 10 dairy states allow access to raw milk. 5 of them allow raw milk to be sold in retail stores, 3 allow on-farm sales, 1 through herdshares, and 1 by incidental sales.

By allowing the sale of raw milk for its citizens, Hawaii won't be forging the way for some fringe movement. Rather it will be joining the rest of the 46 other states who already allow access to raw milk. It will allow its citizens the right to consumer choice and by doing so it will support its local small family farms who so desperately need local support.

Thank you for you time and consideration of this bill.