JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. Box 3378
Honolulu, HI 96801-3378
doh.testimony@doh.hawaii.gov

Testimony in OPPOSITION on HB1989HD1
RELATING TO RAW MILK

REPRESENTATIVE MARK M. NAKASHIMA, CHAIR,
HOUSE COMMITTEE ON CONSUMER PROTECTION AND COMMERCE
Hearing Date: 2/27/2024 2:00 pm Room Number: Rm 329
VIDEO CONF

Fiscal Implications: This measure has substantial fiscal implications that is not included in the executive budget.

Department Testimony: The Department of Health (department) opposes this measure.

The department opposes this bill due to serious public health concerns.

Section 1 of the bill finds that people in Hawaii desire to drink raw milk. However, the Department urges the legislature to weigh the potential health risk allowing raw milk to be sold. Based on CDC data, literature, and state and local reports, FDA compiled a list of outbreaks that occurred from 1998 through 2018 in the US. During this period, there were at least 202 outbreaks due to the consumption of raw milk and raw milk products. These outbreaks caused 2,645 cases of illnesses, 269 hospitalizations, 3 deaths, 6 stillbirths and 2 miscarriages. The numbers of outbreaks and illness cases were likely higher than the above estimates due to underreporting.

If this measure is passed, the public could be exposed to undue risk of serious illness or death by possible exposure to pathogenic organisms. Our Keiki, Kupuna, and the immunocompromised face even greater risk than the general public, as they will face much greater difficulty fighting off any pathogens ingested and will have a much higher mortality rate for almost all pathogens associated with consuming raw dairy products. The FDA and the CDC have published many science based articles debunking every statement in Section 1, and is included in this testimony.

According to the CDC's most recent study, states/counties where raw milk was legally sold had 3.2 times more outbreaks than areas where the sale of raw milk was illegal. Areas where raw milk was allowed to be sold in retail stores had 3.6 times more outbreaks than areas where sale was allowed only on farms. The study shows that laws that increase the availability of raw milk are associated with more illnesses and outbreaks. In addition, the CDC reported that consuming

unpasteurized milk is 150 times more likely to cause foodborne illness and 13 times more hospitalizations than drinking pasteurized milk products.

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

The State of Hawaii currently prohibits the sale of raw milk in any form. Hawaii Administrative Rules, Title 11, Chapter 15, "Milk", Section 11-15-45, 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"...

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

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

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

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

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

"Opportunities for the introduction and persistence of *Salmonella* on dairy premises are numerous and varied, and technology does not exist to eliminate *Salmonella* infection from dairy herds or to preclude re-introduction of *Salmonella* organisms. Moreover recent studies show that cattle can carry and shed *S. dublin* organisms for many years and

demonstrated that *S. dublin* cannot be routinely detected in cows that are mammary gland shedders."

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

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

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

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

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

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

Section 6. is also objectionable from a public health standpoint as the handling of any raw milk product may expose persons to the same pathogens of public health concerns. Children relish in the act of feeding pets and their health will also be placed at undue risk if this measure passes.

The department also opposes any cow sharing and raw milk for animal/pet consumption as that milk is frequently diverted as raw milk consumption to humans.

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

Raw Milk Misconceptions and the Danger of Raw Milk Consumption

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

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

Raw milk does not cure lactose intolerance.

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

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

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

Raw milk does not cure or treat asthma and allergy.

The PARSIFAL study (Waser et al., 2007) has been misused by raw milk advocates ever since it was published. The PARSIFAL study found an inverse association of **farm milk** consumption, **not raw milk consumption**, with asthma and allergy. The authors of the PARSIFAL study clearly indicated in the paper that the "*present study does not allow evaluating*

the effect of pasteurized vs. raw milk consumption because no objective confirmation of the raw milk status of the farm milk samples was available." In fact, in the study, about half of the farm milk was boiled (Waser et al., 2007). The authors of the PARSIFAL study concluded that "*raw milk may contain pathogens such as salmonella or EHEC, and its consumption may therefore imply serious health risks… At this stage, consumption of raw farm milk cannot be recommended as a preventive measure*." (Waser et al., 2007)

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

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

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

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

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

Bacteria in raw milk are typically not of human origin. An exception is *Streptococcus pyogenes*. *S. pyogenes* that has adapted to humans can be transmitted to animals. Once *S. pyogenes* is colonized in animals, it can be re-transmitted to humans as a **human pathogen** that causes strep throat. For example, *S. pyogenes* can infect a cow udder to cause mastitis. The infected cow udder can subsequently shed *S. pyogenes*, a pathogen, into raw milk.

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

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

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

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

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

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

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

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

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

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

The predominant fraction of immunoglobulins in bovine milk is IgG (about 85-90%). IgG is quite heat stable. In one study, LTLT pasteurization (63°C for 30 min) had no impact on the

level of IgG, and HTST pasteurization (72°C/15s) resulted in only 1% denaturation of IgG (Mainer et al., 1997).

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

Raw milk is not nutritionally superior to pasteurized milk.

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

Milk proteins

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

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

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

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

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

Milk vitamins

Milk contains both fat soluble and water soluble vitamins. Fat soluble vitamins include A, D, E, and K. Water soluble vitamins included B1 (thiamin), B2 (riboflavin), niacin, pantothenic acid, B6, biotin, folic acid, B12, and vitamin C (Renner et al., 1989). In general, pasteurization has a little effect on milk vitamin levels (Bendicho et al., 2002; Renner et al., 1989). Vitamins that are present at high levels in milk, such as riboflavin, B6 and B12, are relatively heat stable. Other

factors, such as storage temperature, dissolved oxygen, light exposure, packaging, and length of storage can have a much greater impact on milk vitamin stability (Gaylord et al., 1986; Kon, 1972; Lavigne et al., 1989; Pizzoferrato, 1992; Renner et al., 1989; Scott et al., 1984a; Scott et al., 1984b).

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

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

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

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

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

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

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

Pasteurization has a limited impact on milk folate level. Folate remains bound to folate binding protein (FBP) after pasteurization (Wigertz et al., 1996). Andersson and Oste (1994) observed no change in milk folate content after pasteurization at 75°C for 16s. Wigertz and Jägerstad (1993) reported a slight decrease of folate content from 8μg/100 g to 6.4μg/100g after pasteurization at 74°C for 15s.

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

Pasteurized milk is safer than raw milk.

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

- New York, *Campylobacter* outbreak, 5 illnesses (New York Department of Health, 2010)
- Michigan, *Campylobacter* outbreak, 12 illnesses (FDA, 2010)
- Pennsylvania, *Campylobacter* outbreak, 10 illnesses (PRNewswire, 2010)
- Utah, *Campylobacter* outbreak, 9 illnesses (Utah Department of Health, 2010)
- Utah, *Salmonella* outbreak, 6 illnesses (Utah Department of Health, 2010)
- Minnesota, *E. Coli* O157:H7 outbreak, 8 illnesses and 4 hospitalizations (Minnesota Department of Health, 2010)
- Washington, *E. Coli* O157:H7 outbreak, 8 illnesses (Washington State Department of Health, 2010)
- Colorado, *Campylobacter* and *E. Coli* O157:H7 outbreak, 30 illnesses, 2 hospitalizations (Boulder County Public Health, 2010a, b)

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

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

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

There is no visual or sensory indicator for the presence of pathogen. Typical milk quality indicators, such as standard plate counts and somatic cell counts, do not provide information on the presence or absence of pathogens. Seemingly high quality raw milk based on these routine quality indicators can still contain pathogen (Van Kessel et al., 2008). In the Federal Register

notification for the final rule to 21 CFR Part 1240.61, FDA made a number of findings including the following:

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

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

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

Summary

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

This is the link to the FDA fact sheet Titled "THE DANGERS OF RAW MILK"
https://www.fda.gov/media/119383/download#:~:text=Raw%20milk%20is%20milk%20from,often%20called%20%E2%80%9Cfood%20poisoning.%E2%80%9D

Thank you for the opportunity to testify on this measure.

Offered Amendments: None

JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor

SHARON HURD
Chairperson, Board of Agriculture

DEXTER KISHIDA
Deputy to the Chairperson

State of Hawai'i
DEPARTMENT OF AGRICULTURE
KA 'OIHANA MAHI'AI
1428 South King Street
Honolulu, Hawai'i 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

TUESDAY, FEBRUARY 27, 2024
2:00 PM
CONFERENCE ROOM 329 & VIDEOCONFERENCE

HOUSE BILL NO. 1989 HD1
RELATING TO RAW MILK

Chair Nakashima, Vice Chair Sayama and Members of the Committee:

Thank you for the opportunity to testify on House Bill 1989 HD1. 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.

HB-1989-HD-1
Submitted on: 2/25/2024 12:00:38 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Colehour Bondera	Kanalani Ohana Farm	Support	Written Testimony Only

Comments:

Aloha Chair and Committee Members:

As a long-time farmer, and consumer advocate, our request is that you please support HB1989.

For your information, our farm does not produce or market milk in any way at this time.

However, as a consumer (which we all are), I seek local and well managed food products to be available.

Honestly, I also seek to support the small-scale operators who otherwise cannot keep their farms in operation.

From a personal side, I grew up on a small farm in Oregon. We always had 2-4 milking cows. Though we consumed, as a family, much of the raw milk, each week there was more than we could use... The family was very careful and good about maintaining the freshness and cleanliness of the milk through cleanliness, filtration and refrdigeration.

However in the early 1980s' it became illegal for operations like ours to sell our milk. The FDA determined that pasturization and facilties were required, and that was not an optioin for a family-scale operation. Selling milk was how our family financed the costs of having the cows. Our customers were high school teachers; since I had older siblings in high school. In the next few years our farm no longer could justify producing the milk due to costs vs. income.

This piece of legislation may or may not help all family-scale farm operations operate successfully, however raw milk is both healthy and wise. Local milk production is important for Hawaii agriculture to survive. Raw milk is something that I have never been able to move on from and as a result, since I was young, the only milk which I will buy is raw, or my body rejects and I have instead gone without. Hawaii can and should let raw milk be available!

Thank you for your support for HB1989.

Yours,

Colehour Bondera

KANALANI OHANA FARM

colemel2@gmail.com

COLEMAN SCIENTIFIC CONSULTING

Testimony on Raw Milk Benefits and Risks 26 February 2024
Hearing on House of Representatives Bill HB 1989
State of Hawaii

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 that provide data and charts from peer-reviewed studies, including a manuscript on a dataset on US outbreaks provided by the Centers for Disease Control and Prevention (CDC) for reporting years 2005-2020. Relevant references are cited herein.

1. **Neither pasteurized nor raw milk is risk free.** My testimony today is based on 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 (currently under review in an epidemiology journal), 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 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 1,000,000,000,000,000 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 ~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 p**asteurized 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

Margaret E. Coleman, Coleman Scientific Consulting
434 W Groton Road, Groton, NY 13073-9784
peg@colemanscientific.org | (315) 729 – 3995

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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)

(manuscript under review)

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

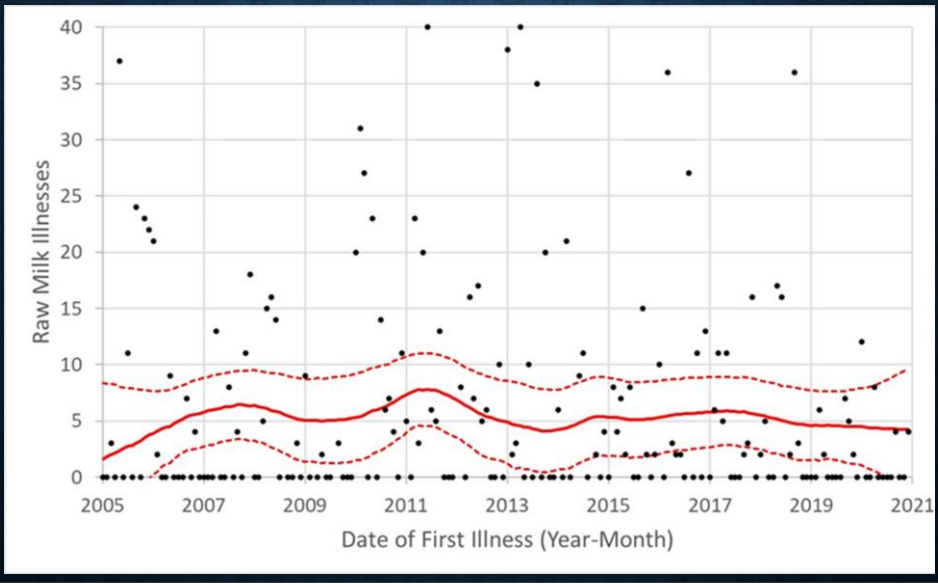
	Pasteurized Milk	Raw Milk
Illnesses	2,111	1,570
Outbreaks	18	162
Hospitalizations	32	170
Deaths	4	2

- **Campylobacteriosis** accounted for 90% of milkborne illness (3,443 of 3,807 illnesses). Of campylobacteriosis illnesses, 54% were associated with pasteurized milk)

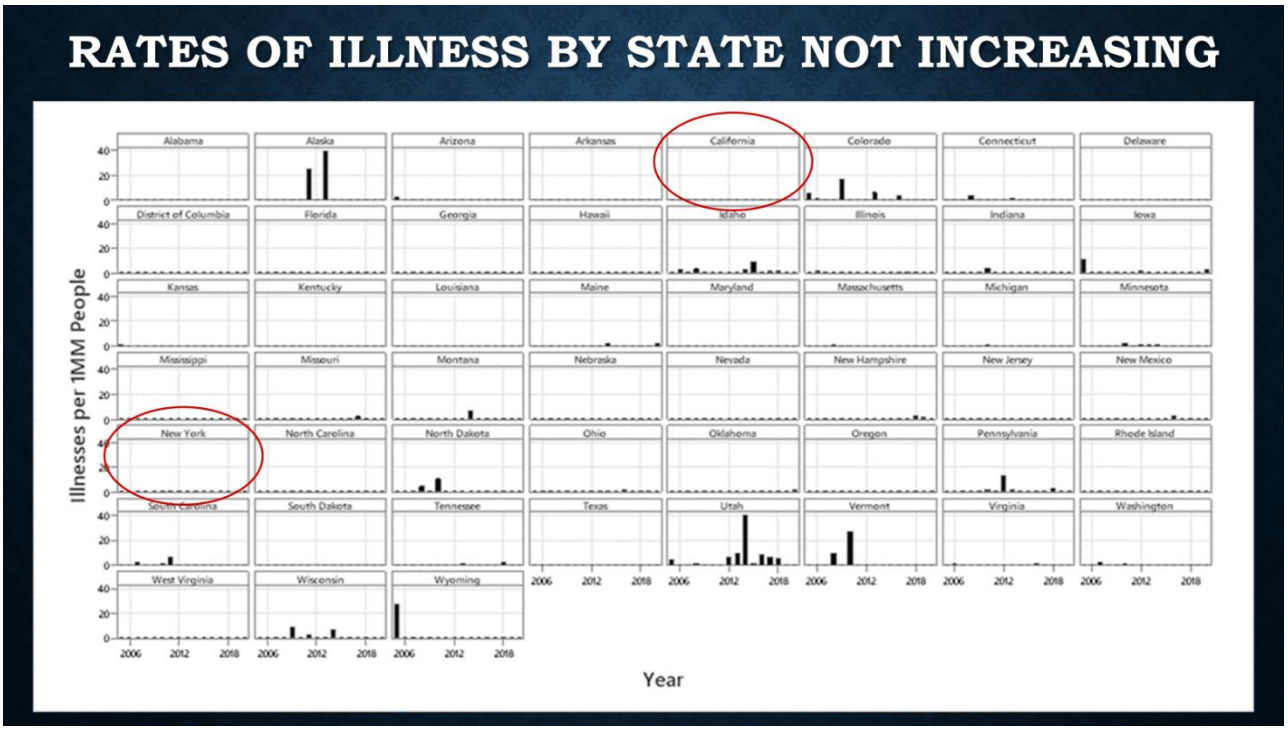
- **Significantly higher risk of listeriosis** from **pasteurized dairy** in a recent systematic review for North America (Sebastianski et al., 2022)

Slide 6

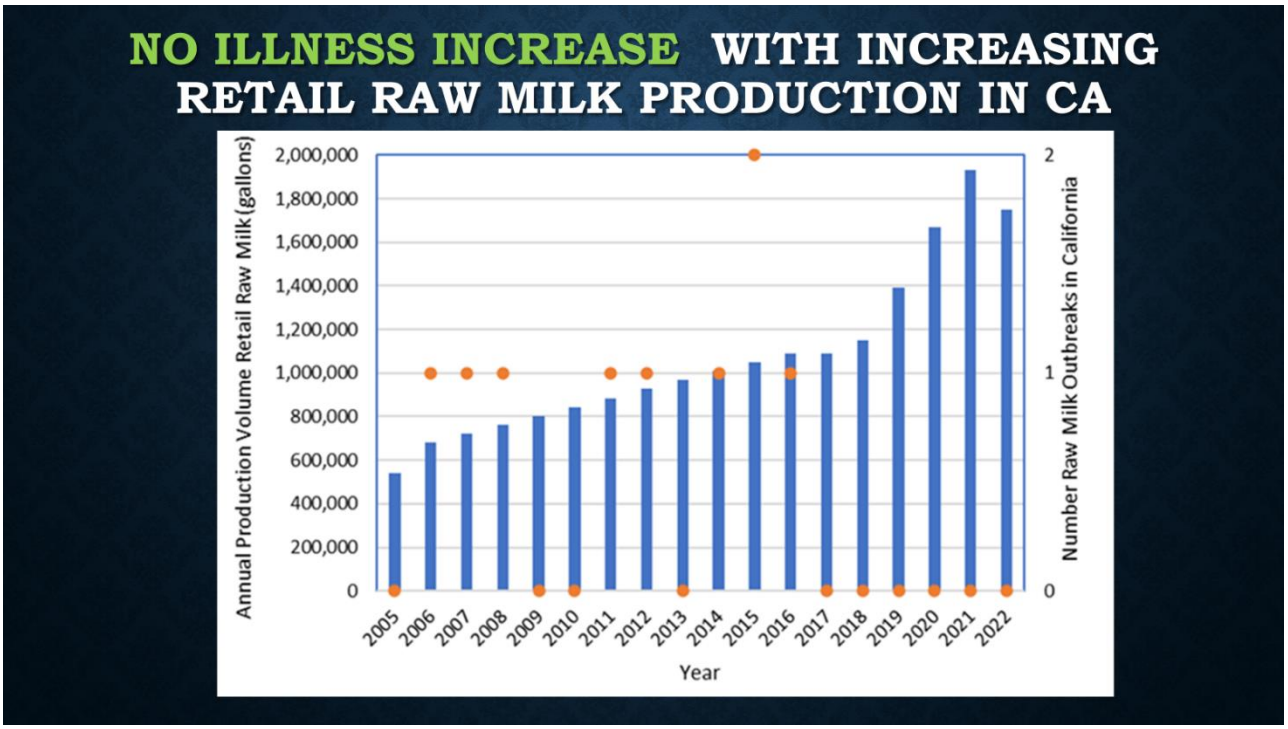
TRENDS OF RAW MILK ILLNESSES PER OUTBREAK NOT INCREASING



Slide 7



Slide 8



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

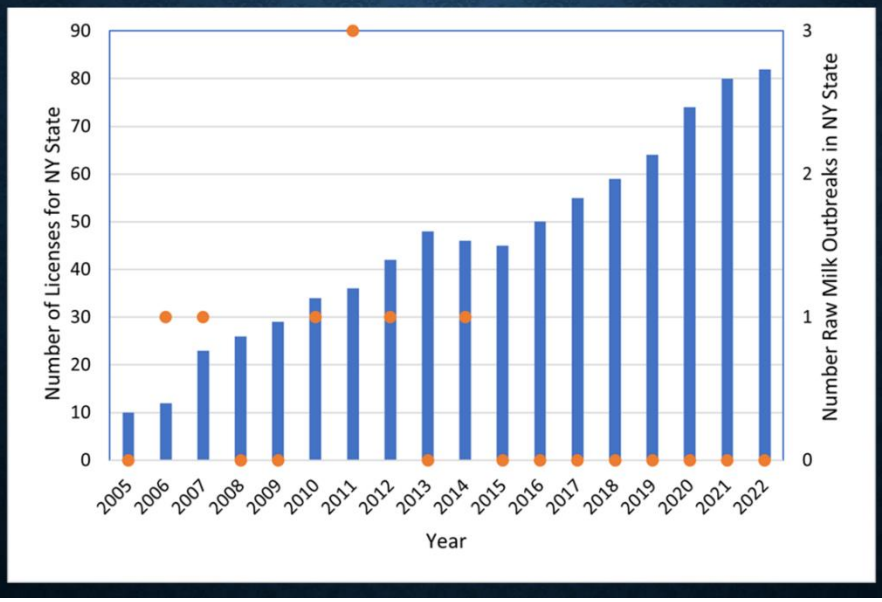
     - **99 illnesses, 16 hospitalizations, 0 deaths**

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**

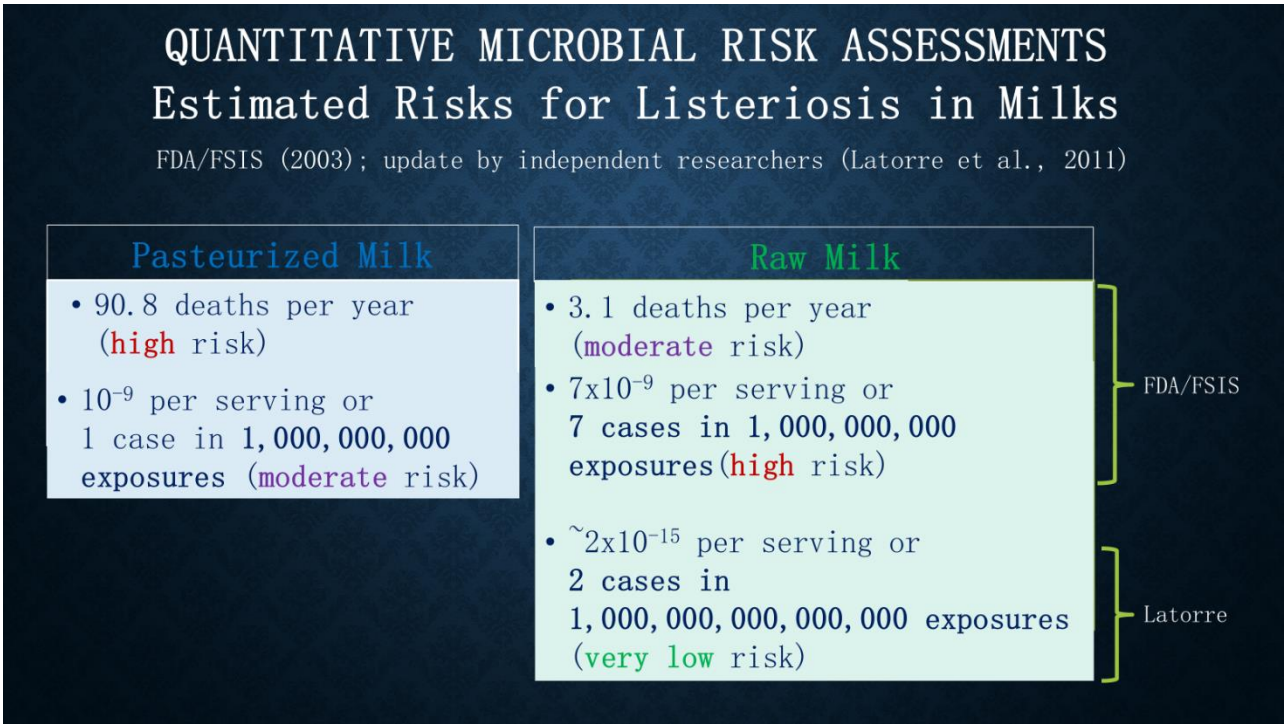
Slide 10

INCREASING RAW MILK ACCESS IN NY STATE NOT INCREASING ILLNESS



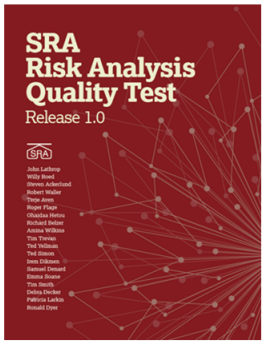
Slide 11

Slide 12



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)

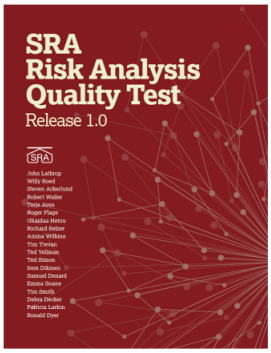
13

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

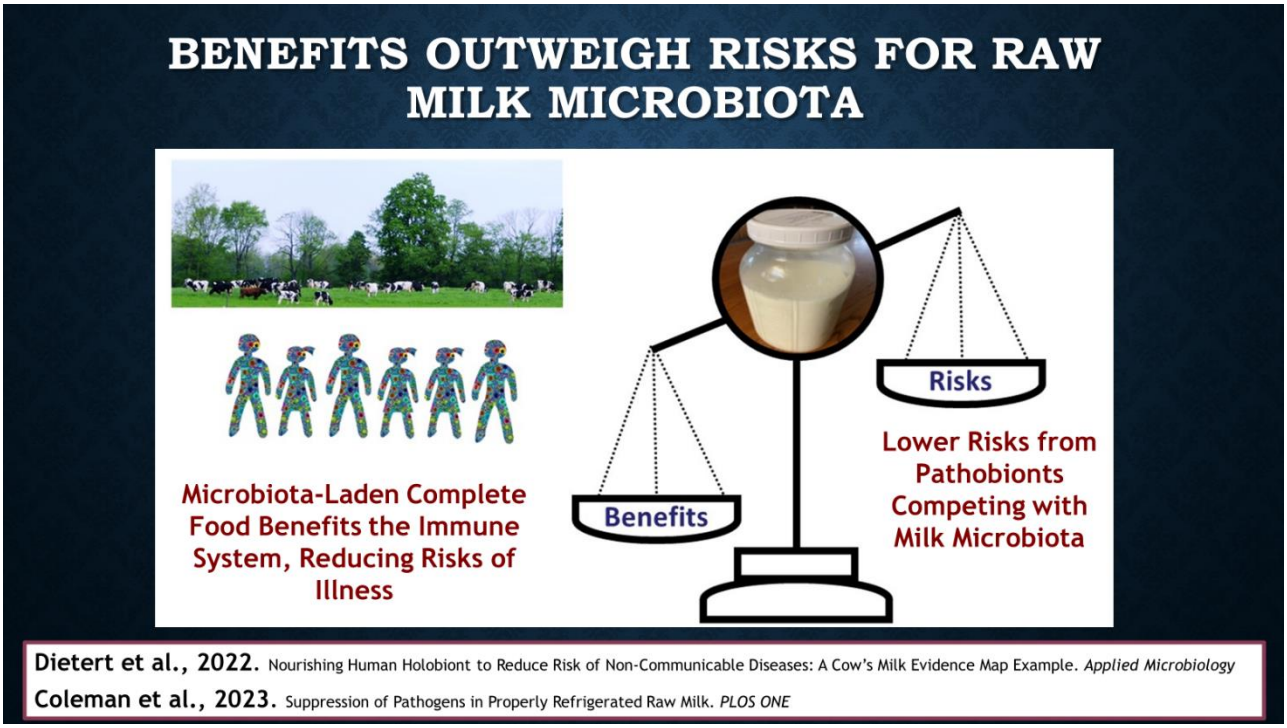
1. **The source of microbes in raw milks is feces**
   - Wu et al., 2019, 2022; Gomes et al., 2020
2. **Pasteurization is a 'silver bullet'**
3. **Pasteurized milk is zero risk**
4. **Raw milk is 'inherently dangerous'**



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

Slide 16



Slide 17

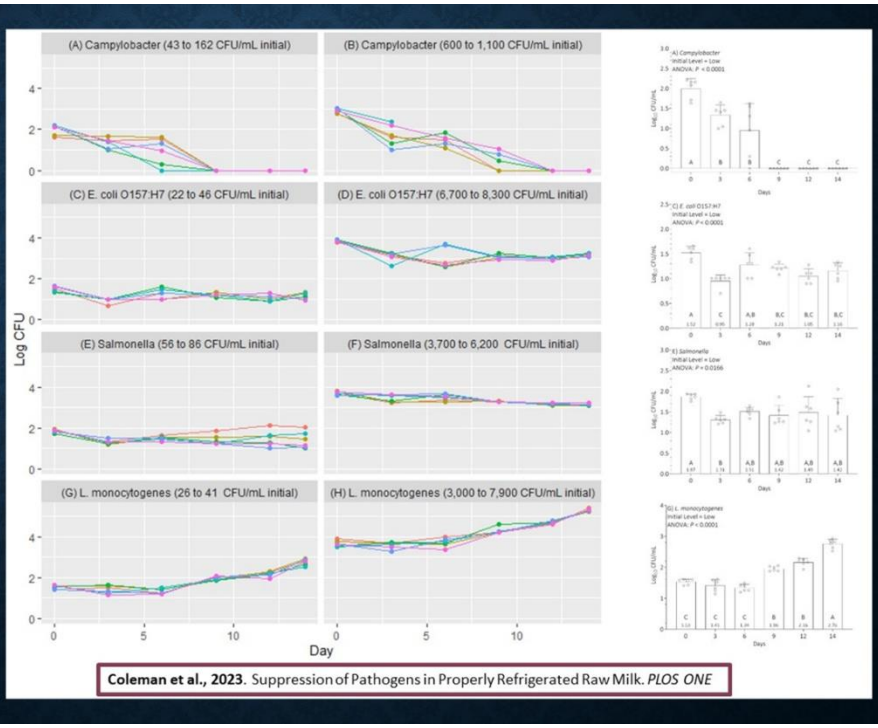
EXTREMELY LOW PERCENTAGE POSITIVES FROM RAW MILK MONITORING PROGRAMS IN US AND AROUND THE WORLD

Recent Results from Pathogen Testing for Raw Milk from 6 Countries	*Campylobacter*	*E. coli* O157:H7 or EHECs	*L. monocytogenes*	*Salmonella*
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)

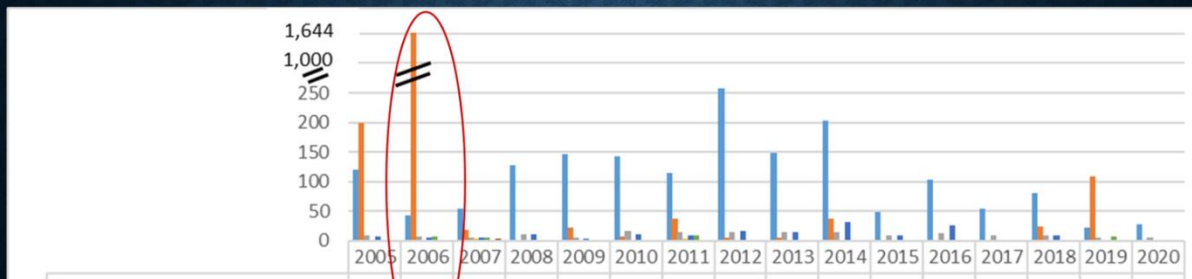
Slide 18

PATHOGEN SUPPRESSION IN RAW MILK



Slide 20

TRENDS OF MILKBORNE ILLNESS
(CDC, 2005-2020)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Illness - unpasteurized	120	43	54	128	147	143	115	258	148	203	48	104	54	81	22	28
Illness - pasteurized	200	1644	19		22	7	37	6	5	38				24	109	
Outbreaks - unpasteurized	9	7	6	11	5	16	15	14	14	14	10	13	9	9	5	5
Outbreaks - pasteurized	1	1	3		1	2	3	1	1	2				2	1	
Hospitalizations - unpasteurized	8	6	5	11	3	12	10	17	15	32	10	26	2	10	2	1
Hospitalizations - pasteurized	1	7	5		0	0	10	0	1	0				1	7	
Deaths - unpasteurized	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Deaths - pasteurized	0	0	3		0	0	1	0	0	0				0	0	

Slide 21

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

COLEMAN SCIENTIFIC CONSULTING

Slide 22

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

P.O. Box 253, Kunia, Hawai'i 96759
Phone: (808) 848-2074; Fax: (808) 848-1921
e-mail info@hfbf.org; www.hfbf.org

February 27, 2024

HEARING BEFORE THE
HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE

TESTIMONY ON HB 1989, HD1
RELATING TO RAW MILK

Conference Room 329 & Videoconference
2:00 PM

Aloha Chair Nakashima, Vice-Chair Sayama, and Members of the Committee:

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

The Hawaiʻi Farm Bureau opposes HB 1989, HD1, 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 showing that the majority of 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 illness from raw milk especially affects 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

House Consumer Protection & Commerce Committee

Hearing: February 27, 2024

LATE

Presented on behalf of the
Weston A. Price Foundation
by Pete Kennedy, Esq.
3830 Jaffa Drive
Sarasota, FL 34239
Phone: 941-34-4984
pete.foodlaw@gmail.com

Honorable Members of the Consumer Protection and Commerce Committee,

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
by Pete Kennedy, Esq.
3830 Jaffa Drive
Sarasota, FL 34239
Phone: 941-34-4984
pete.foodlaw@gmail.com

HB-1989-HD-1
Submitted on: 2/22/2024 4:06:02 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Sara Kim	Individual	Support	Written Testimony Only

Comments:

So excited to support this bill raw milk is so good for us!!!

HB-1989-HD-1
Submitted on: 2/23/2024 5:59:42 AM
Testimony for CPC on 2/27/2024 2:00:00 PM

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

Comments:

Support.

Mahalo,

Glen Kagamida

Hilo

HB-1989-HD-1
Submitted on: 2/24/2024 5:55:16 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

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

Comments:

I support the legalization of raw milk sales in Hawaii.

HB-1989-HD-1
Submitted on: 2/25/2024 7:37:15 AM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Chelsee mcphatter	Individual	Support	Written Testimony Only

Comments:

Unpasteurized milk has amazing health benefits, I have been drinking raw milk for 2 years now and have seen a MAJOR improvement in my overall health and wellness.

HB-1989-HD-1
Submitted on: 2/25/2024 3:48:11 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Alianne Mahlstedt	Individual	Support	Written Testimony Only

Comments:

The benefits of RAW dairy far outweigh the potential risks in my opinion. Citizens should be given the choice.

HB-1989-HD-1
Submitted on: 2/25/2024 5:00:16 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Jacqueline Bosman	Individual	Support	Written Testimony Only

Comments:

I support the sale of Raw milk in Hawaii. A majority of other States are not criminalizing the sale of milk in its natural form- being Raw. With the consumer able to make a decison for themselves and their family I feel there should be no ban on the sale of a one of the most natural and arguably most nourishing foods on our planet. Let the people of Hawaii choose for themseleves.

Mahalo,

Jacqueline

HB-1989-HD-1
Submitted on: 2/25/2024 8:49:53 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Amber Aoki	Individual	Support	Written Testimony Only

Comments:

Aloha, my name is Amber Aoki and I am in strong support of the legalization of raw milk here in Hawai'i. Studies have shown that farm-fresh, unprocessed milk has many health benefits. It's also shown to be easily digested by those who are considered lactose intolerant from conventional, processed dairy. Please consider making raw milk an option for local residents as it is widely available in other states. I appreciate your attention to this matter.

HB-1989-HD-1
Submitted on: 2/26/2024 12:51:18 AM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Esther Arkfeld	Individual	Support	Remotely Via Zoom

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.

HB-1989-HD-1
Submitted on: 2/26/2024 10:57:29 AM
Testimony for CPC on 2/27/2024 2:00:00 PM

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

Comments:

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 Black Plague and Measles outbreaks are happening on the continent. We are already seeing death and hospitalization all over the continent because of raw milk consumption. Please defer this measure. It is a walking health hazard.

HB-1989-HD-1
Submitted on: 2/27/2024 1:59:20 PM
Testimony for CPC on 2/27/2024 2:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Hubert Karreman	Individual	Support	Written Testimony Only

Comments:

Hello Hawaii House of Representatives,

I'm a large animal veterinarian since3 1995 that has specialized in dairy animals, starting as a herdsman with goats and then cows in the 1980's, and then as a veterinarian for about 100 certified organic herds in PA and now as a dairy farm owner of 75 Jerseys here in North Carolina.

As a veterinarian and raw milk drinker, I may have some unique insights into the raw milk bill that you are considering. First, it's not rocket science to say that raw milk is basic to mammalian biology: *all* mammals drink raw milk when young and suckling. Its constituents are easily recognized by the digestive tract whereas pasteurized milk proteins become somewhat denatured and can appear foreign to the digestive tract, causing intestinal upset. Cats and dogs fed raw milk do not get diarrhea like those same animals that drink pasteurized milk when consuming equal amounts of milk. 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 higfher due to not being denatured by pasteurization. Goat milk is an excellent source of Vitamin A (source WebMD) which is very important for good vision. Goat milk come from the doe already pre-homogenized, which can be important for some animal's digestive system.

Why am I focusing oin the digestive system? Because our immune system depends on proper digestion for optimal efficiency. Denatured / foreign substances (pasteurized proteins) are looked at as foreign by the body and bad reactions are the outcomes. The bad reactions cause inflammation, which is the root of so many illnesses of both pets and people.

I would urge you to allow people to have a choice if they want to give their pets raw milk or pasteurized milk. Raw milk made well is medicinal. Certainly, go ahead and set up standards for it. Afterall, there were local medical boards started in the 1920's that set up standards for Certified Raw Milk; the last Board existed until the 1970's or so.

In closing, a mammal's closest connection to its original source of life, its mother, is through raw milk - suckled or freely drank. All animals Iknow enjoy milk. Please allow the natural design of animals to be honored and enhanced by allowing raw milk for pets.