

DAIRY TALKING POINTS

1. DISPLACED DAIRY FARMERS: Currently there is no support in ag economics literature for large increases in efficiency as herds expand above 200-300 head. Additionally, there is no support for these claims for mega dairies where thousands of animals are raised on a single facility.ⁱ According to the Nebraska Center For Rural Affairs, each new 1,000 head dairy in Nebraska has the capacity to displace 10 or more family sized farms.ⁱⁱ

2. WATER USAGE: Dairy CAFOs utilize enormous amounts of water for daily operations. About 5 to 10 gallons of fresh water is needed per day and up to 150 gallons per cow or more for manure flushing and cow washing.ⁱⁱⁱ This can create stresses for already depleted water sources in some communities where dairy CAFOs locate.

3. WASTE GENERATED: Dairy CAFOs create large amounts of liquid and solid waste. One 1,200-pound dairy cow alone produces the same amount of waste as 23 humans.^{iv} Thus, a dairy CAFO with 10,000 cattle will produce the same amount of manure waste as a city of 230,000 humans.

4. WASTE AMOUNTS and PROBLEMS: The vast amounts of waste produced by mega dairies can overwhelm the ability of local soils and crops to absorb the nutrients, which can result in runoff and ground and surface water contamination. Runoff from dairy CAFOs can flow from silage, stockpiled manures, barns, and accidental and intentional releases. Runoff from manure on frozen ground can result in significant levels of fecal coliform. In two watersheds in Virginia, over 80% of fecal streptococci were from domestic livestock.^v

5. DAIRY WASTE CESSPOOLS: Dairy waste is often mixed with water and flushed into large open holes called lagoons. Studies show that groundwater quality can be endangered near CAFOs due to leakage and seepage from lagoons which are large holes that store and minimally treat the waste after it is flushed and mixed with water. Results from a preliminary study from 7 dairy feedlots over 6 years point to the significant contamination from lagoons. Elevated levels of nitrate, ammonia, chloride, nitrogen and total dissolved solids were discovered in nearby monitoring wells. The study concluded that the mean concentration for all contaminants increased as dairy herds increased.^{vi} Waste lagoons, even with clay liners, allow contaminants to leach into the ground below the lagoon. At the maximum allowable rate a 3-acre lagoon could legally leak more than a million gallons a year.^{vii}

Seepage from manure holding basins and lagoons can have a serious impact on ground water quality, especially from nitrate and ammonium. Even lined basins and lagoons, when properly constructed, can be a hazard when constructed in coarse textured soils or karst terrain. (sandy porous limestone)^{viii}

6. COMPONENTS of WASTE: Dairy waste contains nitrogen and phosphorous compounds, which are called nutrients. These nutrients can overload natural waterways and cause algal blooms. Nitrogen and other contaminants can flow into groundwater and wells, making water unsafe for drinking. Runoff can also contain harmful pathogens that can cause human disease and death.^{ix}

7. WELL WATER CONTAMINATION: Studies from an independent scientific organization show link between higher contaminations of well water near Concentrated Animal Feeding Operations. Water from wells used by low income residents in the Lower Yakima Valley have been tested this past year by the Valley Institute for Research and Education (VIRE). The study reveals a direct correlation between the location of large confined dairy operations and the pollution of private wells with E. Coli and high nitrate concentrations.

The studies show that the wells in the area between Parker and Zillah, where there are a low number of factory dairies, have levels of nitrates below federal standards for nitrates (10 mg/l) and are absent for E. Coli contamination. The water falls within federal safe water guidelines. In sharp contrast, the areas between Granger and Grandview, where large numbers of cows are confined year round, high levels of nitrates and the presence of E.Coli have been found.^x

8. MORE PATHOGEN LOADING ON BIGGER DAIRIES: Studies now show that pathogen loading of a concentrated operation such as a dairy is significantly higher than that of rangeland fed cattle. Pathogens such as fecal coliform, ecoli, girardia lambia, and cryptosporidium exist in dairy manure, which can result in human illness if manure discharges or runoff occurs.^{xi} Four outbreaks of cryptosporidium have been linked to nonpoint agricultural pollution.^{xii}

9. NEW MEXICO RESEARCH: Dr. Stephen D. Arnold, from New Mexico State University provides data on the impacts of dairies in a recent preliminary study measuring dairy feedlot contributions to groundwater contamination.

Results from this preliminary study that analyzed groundwater quality data from seven dairy feedlots over a six-year period point to significant contamination problems. This study found elevated levels of nitrate, ammonia chloride, nitrogen, and total dissolved solids. Samples were obtained from groundwater monitoring wells located around dairy wastewater lagoons that were lined with clay, concrete, or synthetic membranes. Mean nitrate concentrations were significantly higher in groundwater samples taken in the vicinity of lagoons with clay liners. The lagoons containing the synthetic membranes produced the lowest mean groundwater concentrations of ammonia and nitrate. Nitrate was the only groundwater contaminant measured that showed a consistently increasing trend from 1992-1997.

The most important thing to note is that the mean concentrations for all contaminants tended to increase as the size of the dairy herds increased.

10. HEALTH CONCERNS: Another preliminary study has recently been conducted to evaluate the health impact of dairy farms on surrounding rural communities in Southern New Mexico. In addition to groundwater contamination, other health concerns for rural populations surrounding dairy farms include odor, flies, and dust.

11. DAIRY DUST AND RISKS: Dairy CAFOs produce dusts that may pose a greater risk than other types of dust. The dust from dried manure from dairies is *agricultural organic dust*, which can contain microorganisms, endotoxins, and aero-allergens. Inhalation of these can lead to several disease conditions in humans. Dairies can create dust from increased traffic due to constant deliveries of milk and supplies on rural roads. Dairies are also sources of hay and grain dust.^{xiii}

12. DIARRHEA AND ASTHMA: The results Southern New Mexico study identified an association between living close to a dairy and a higher reported rate of diarrhea and asthma in children during the preceding three months. Several new studies have been

released in the past few years regarding residents who live in the vicinity of hog factories. The preliminary results of this study findings mimic the findings in research which demonstrates that residents are experiencing health problems due to intensive livestock operations.

13. FLIES and DAIRIES: Flies can be a significant agent or mechanical carries of disease and control of fly populations on dairies is difficult. The normal travel range of flies is one to two miles. Flies can spread a host of diseases dangerous to man, including salmonella, diarrhea, gastroenteritis, amoebic dysentery, and conjunctivitis.^{xiv} Flies have recently been linked as a vector for cryptosporidium parvum. Two studies used infected bovine feces to yield these results. The studies suggest that if infected flies land on food, cryptosporidiosis could also be a significant food borne infection.^{xv}

14. DANGEROUS GASES from WASTE: Dairy CAFO waste lagoons use anaerobic decomposition to break down waste material. Hog lagoons and manure disperse as many as 160 compounds that are created from the aerobic and anaerobic decomposition of waste.^{xvi} One of the compounds produced is hydrogen sulfide. This gas has been proven to be a potent neurotoxin and has been linked to causing permanent and irreversible brain and nervous system damage, even at low ambient levels.^{xvii}

15. HYDROGEN SULFIDE FACTS: According to Dr Kaye H. Kilburn, MD “even moderate occupational exposure and insidious downwind environmental occupational exposure to Hydrogen Sulfide can cause permanent impairment.” and “well beyond calling for epidemiologic studies, these findings imply that neighborhoods near refineries and other industrial sites where Hydrogen Sulfide is released deliberately or inadvertently are unsafe.”^{xviii} Hydrogen sulfide gas can travel far beyond the confines of a facility and potentially damage human health. This toxic gas can also be expected to violate Minnesota State standards as far as five miles from livestock facilities according to the MPCA.^{xix}

16. MEASUREMENTS AT DAIRIES THREATEN HEALTH: In 2003, toxic gas levels were measured at CAFOs in Iowa and levels reached dangerous concentrations 22 times in the first months of evaluation. A monitor at an Atlantic- area dairy had seven ammonia readings above the limit of 15 parts per billion. Readings reached as high as 250 parts per billion for ammonia. The readings for hydrogen sulfide reached over 70 parts per billion for hydrogen sulfide at the Atlantic dairy.

17. AEROSOLIZED EMISSIONS AND CAFOS: A recent study of bioaerosol distribution patterns from swine CAFOs in the Midwest found that significant levels of staphylococci and fungus from the CAFOs had aerosolized and traveled down wind. These contaminants were found in nearby residences. Also discovered outside the CAFOs were antibiotic resistant bacteria. Neighbors in close proximity to these CAFOs complained of serious odors emanating from the facilities, personal discomfort due to the odors, loss of sleep, possible allergic manifestations, and respiratory difficulties. This study underscores the potential dangers of CAFOs and their impact on public health. The researchers summarized that animal confinement facilities should be sited with consideration of the location of human habitation.^{xx}

18. ANTIBIOTIC RESISTANT PATHOGENS IN THE AIR FROM CAFOS: An Iowa study by J.A. Zahn, indicates that aerial transfer of antibiotics and antibiotic resistant bacteria from swine confinements may represent an important and previously overlooked

mechanism for transfer of antibiotic resistance to humans and the environment. This study also concludes that neighbors of CAFOs may be at risk.^{xxi}

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- ⁱ Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000. p 26.
- ⁱⁱ Nebraska Center For Rural Affairs Newsletter, "Nebraska Rural Action supplement, "Big Milk From Big Dairies," July 2000. p.2.
- ⁱⁱⁱ Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000
- ^{iv} Unites States Environmental Protection Agency
- ^v Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000. p.36.
- ^{vi} "Dairy Feedlot Contributions to Groundwater Contamination," Steven D. Arnold, PhD., Edward Meister, PhD. Environmental Health, September 1999. Abstract, p.16.
- ^{vii} Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000p. p.36.
- ^{viii} Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000. p. 36
- ^{ix} Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000. p 26.
- ^x Press Release CARE, January 13, 2003 CARE Charles Tebbut Western Environmental Law Center
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- ^{xii} Weida, William J. "A Citizens Guide to the Regional Economic and Environmental Effects of Large Concentrated Dairy Operations," November, 19, 2000p. 33.
- ^{xiii} "Dairy Herds and Rural Communities in Southern New Mexico," by Stephen Arnold, PhD. July August 1999, Environmental Health, p 15, 16.
- ^{xiv} Dairy Herds and Rural Communities in Southern New Mexico," by Stephen Arnold, PhD. July August 1999, Environmental Health, p.11
- ^{xv} Flies Implicated as vector for Cryptosporidium," Press Release: American Society for Microbiology November 2, 2000 Barbare Hyde 202-942-9206 bhyde@asmusa.org
- ^{xvi} Kendall Thu, PhD. Et al., eds., "Impacts of Large Scale Swine Production," Proceedings from an Interdisciplinary Workshop, Des Moines, Iowa, June 29-30, 1995 p 47
- ^{xvii} Testimony of Kaye Kilburn, Ph.D. and Marvin Legator, Ph.D., presented at American Public Health Association meeting, November 11, 1997, Indianapolis, Indiana, included in Hydrogen Sulfide letter to EPA, 1/25/99
- ^{xviii} AFFADAVIT of Kaye Kilburn M.D. University of Southern California School of Medicine Environmental Sciences Laboratory Los Angeles California: Civil Action File No.: 970-CV-238
- ^{xix} Perry Beeman, "New Fears From Hog Lots: Odor May Spread Illness," Des Moines Register 10/25/98
- ^{xx} "Bioaerosol Distribution Patterns Adjacent to Two Swine Growing Finishing Housed Confinement Units in the American Midwest," P.V. Scarpino and H. Quinn, Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, Ohio, 45221-0071 Source: Abstracts of the 14th ANNUAL scientific Symposium of the Ohio River Basin Consortium for Research and Education, Oct. 14-16, 1998.
- ^{xxi} J.A. Zahn, Evidence for Transfer of Tylosin and Tylosin-Resistant Bacteria in Air from Swine Production Facilities using Sub-Therapeutic Concentrations of Tylan in Feed.