



LAB TESTS CONFIRM
Scientists recommend
**ALL NATURAL
DIOXIN FREE
PET BEDDING**

WHAT IS THE SAFEST BEDDING FOR SMALL PETS?

Update:

Since this white paper was written, American Wood Fibers (AWF) asked the Michigan State University Diagnostic Center For Population and Animal Health (DCPAH) to review previous pet bedding test results, underwritten by AWF, that showed the presence of Dioxin in "sludge-based" beddings – often labeled "reclaimed pulp", "reclaimed cellulose" or "cellulose fiber." The DCPAH review of the results indicated that these findings appeared reasonable.

"Dioxin and dioxin-like compounds are considered to be ubiquitous, particularly in more industrialized nations," wrote John P. Buchweitz, Ph.D., clinical toxicologist, and Andreas F. Lehner, Ph.D., analytical chemist, both from DCPAH. They went on to state that: "Based on the findings of this limited initial study, it is important to note that pet beddings made with reclaimed pulp fibers are more likely to contain detectable levels of dioxin than wood shavings or byproduct papers."

The review notes that DCPAH did not perform the testing on these products, and care should be taken in interpreting the results, and that "there is an inherent health benefit to minimizing cumulative dioxin exposures and such exposures should be avoided whenever practical."

Drs. Buchweitz and Lehner conducted the review of previous testing of numerous small animal bedding products currently on the market. The tests were performed using EPA (Environmental Protection Agency) Method 1613B, which "...is the EPA method of choice for Safe Drinking Water Act (SDWA) compliance testing and to meet the effluent monitoring requirements of the Pulp and Paper Industry," states the review.

Buchweitz and Lehner also said, "We commend your company (AWF) for being proactive in limiting animal exposure to toxic polychlorinated dibenzo-p-dioxins and – furans and feel certain that your ongoing monitoring program provides long term benefit to animal health."

Another relevant piece of information on the topic of small pet bedding safety is contained in an article entitled "The Truth About Pine Shavings, aka Pine shavings are safe to use," (the title would be a live link to the article) written by Corinne Fayo, and reviewed by Carol Green, a rabbit breeder with a Ph.D. in pharmacology and toxicology.

Following is the original AWF white paper, originally published in 2011..

Americans love their pets.

The American Pet Products Association (APPA) 2011-2012 National Pet Owners Survey estimates that there are 86.4 million cats, 78.2 million dogs and 16.0 million small pets taking residence in U.S. homes. In addition, the research states that 62 percent of U.S. households have a pet, which equates to 72.9 million homes. The APPA study also estimates that this country's pet industry will have sales of \$50.84 billion in 2011.ⁱ And it appears that pets are good for their humans' health as APPA cites studies that show that pets help their owners to lower cholesterol, reduce stress, prevent heart disease, and fight depression. ⁱⁱ

Caring for pets is a major effort and source of concern. Choosing the best food, veterinarian and exercise plan is critical for any animal. Of particular importance for small pets is their living environment. Unlike dogs and cats, which enjoy more mobility, most small animals are confined to cages that become their entire world. Each item that goes into their habitat requires careful consideration, especially the bedding, as there are a number of options. Consumers have to know what they're buying and, equally important, what is effective and safe for the smallest member of their family.

There is a wide variety of pet bedding material. For instance:

- Wood shavings such as pine, aspen and cedar
- Paper, including recycled newspapers and magazines, and reclaimed cellulose pulp products
- Corncobs
- Straw
- Wheat

How does a person choose and what criteria should guide that choice?

There are certain functional features that a bedding product must possess, such as absorbency, odor control and ease of use. Odor control has been chosen by consumers to be the most important feature of small pet bedding products in most surveys. A 2006 American Association for Laboratory Animal Science (AALAS) study found that pine bedding has much better ammonia-absorbing properties than is found in paper products. This is important because the uric acid in pet urine turns to ammonia and is the primary cause of cage odor in small animal habitats. The kiln drying process used to produce softwood beddings reduces the aromatic oils in a safe, effective way. But more about that later.

With concerns about unhealthy ingredients in a number of consumer products, including some in the pet industry, coming to the public's attention (e.g. melamine found in dog food made in China and more recently, salmonella found in pig ears and cat food), safety is an increasingly important consideration when choosing a pet bedding. But there is misinformation in the small pet products arena that can complicate the decision.

Contrary to information commonly cited, the naturally occurring aromatic hydrocarbons (also known as "aromatic oils" or phenols) in pine shavings have been demonstrated to be safe for small animals. The heat treating (kiln drying) of the wood fiber that is part of the manufacturing process significantly reduces these hydrocarbons. Also, changes to liver enzyme levels, usually cited by opponents of pine, are not a sign of damage to the liver. An often quoted study, Cunliffe-Beamer -1981, examined mice injected with barbiturates to measure sleep time. People citing this study rarely mention that liver enzymes can be elevated by common environmental factors such as food, or that these changes can be part of normal bodily functions.

There have been ongoing claims that paper pulp fiber beddings are safer and healthier for small pets than pine. Interestingly, these claims only started gaining ground when the leading manufacturer of this product started an aggressive campaign alleging that their product had none of the "harmful aromatic oils" found in pine and cedar shavings. While these claims circulate around the internet and elsewhere, they are inaccurate.

For instance, the American Veterinary Medical Association (AVMA) cites an independent, peer reviewed study as a source for help in determining the relative merits of various beddings. Published in 2004 by the Journal of the American Association for Laboratory Animal Science, the study found: "...that all bedding types that we evaluated, except for CareFRESH Ultra, were acceptable choices for use in static cages." (The study notes that CareFRESH Ultra was removed from the study prior to completion due to high ammonia levels in the cage enclosures.)ⁱⁱⁱ

The key point is that the research concluded that pine shavings did not cause any problems when used as small animal bedding. In light of the findings of this study, the AVMA withdrew the recommendation against pine bedding in their brochure "What You Should Know About Selecting a Pet Rodent."

"There is nothing that would suggest that pine isn't perfectly safe for use as a small animal substrate," said Dr. Thomas Edling, DVM, then a staff veterinarian for Petco Animal Supplies and a leader in the small animal and bird pet supplies industry. "Most of the negative comments surrounding pine come from the internet and those that don't differentiate between pine and cedar."

Eastern Red Cedar has also been criticized as unhealthy pet bedding. It has long been known and used for its aromatic qualities which, like pine, come from the natural oils found in the wood. When shaved and kiln dried, this cedar produces a bedding that is all natural and very effective for odor control. Because the naturally occurring phenols have a different chemical composition than the one in pine, it produces a different, often more intense aroma. Like pine, the kiln drying process reduces the natural hydrocarbons, but there is evidence to suggest that some percentage of small animals, especially when housed in poorly ventilated enclosures, have respiratory sensitivities to this bedding. Research studies show that cedar remains a very popular and effective bedding for larger animals such as dogs, horses and pets housed outdoors. The number one reason cited for choosing this bedding is the effective odor control it provides.

So the extensively disparaged kiln dried pine and cedar products both provide all natural, effective and economical pet beddings for a wide range of animals. The irony is that other bedding materials may pose more of a threat to small animal health.

Many of the leading paper bedding products are produced with fibers that are collected from pulp mill clarifier solids. These sludge-based beddings – often labeled "reclaimed pulp", "reclaimed cellulose" or "cellulose fiber" - are the result of solids that are discharged from pulp mill clarifier solids. Most pulp mills have an acid sewer and a basic sewer that blend together and dump into a large settling pond called a "clarifier." The solids that are too small to make paper combined with the "wash up water" drain into the clarifier where the heavy particles settle to the bottom. These particles are then collected, screened to take out big chunks, "dewatered" through the use of a chemical flocculent, and then dried to create the bedding.

The color of the waste product varies with the different solids that make it into the sewer on a particular day or because the sludge is collected from a different product produced by the paper or pulp mill. The darker grey sludge is usually from the fly ash removed with the other exhaust pollution by scrubbers on the exhaust stacks.

Though the paper industry has made efforts to rid their waste streams of the most troubling compounds, tests conducted by independent laboratories, and funded by American Wood Fibers, showed that detectable amounts of Dioxin remain in all samples of the reclaimed pulp paper beddings tested.

These tests showed that traces of Dioxin were present in gray and brown paper bedding products to a Toxic Equivalency Quotient (TEQ) of between 0.13 ng/kg (nanograms per kilogram) and 0.53 ng/kg. Research indicates that there is no safe level of exposure to dioxins in humans (and, one can assume, small animals).

Though there has been no "official" position taken on the safety of sludge-based small pet bedding products by the EPA, FDA or other regulatory agencies, conventional wisdom points to a "better to be safe than sorry" approach; that it is in the best interests of our small pets to avoid all sludge-based bedding products, as there are other, more-natural, effective - and safer - options readily available.

ⁱ Source: http://www.americanpetproducts.org/press_industrytrends.asp

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* Pets Help to Lower Blood Pressure. A recent study at the State University of New York at Buffalo found that people with hypertension who adopted a cat or dog had lower blood pressure readings in stressful situations than did those who did not own a pet. (Dr. Karen Allen, State University of New York at Buffalo)

* Pets Help to Reduce Stress. Walking with a pet helps to sooth nerves and offers instant relaxation. Studies conducted worldwide have shown that the impact of a stressful situation is lesser on pet owners, especially males, than on those who do not own a pet. (Josephine M. Wills, Waltham Centre for Pet Nutrition, United Kingdom)

* Pets Help to Prevent Heart Disease. Because pets provide people with faithful companionship, research shows they may also provide their owners with greater psychological stability, thus a measure of protection from heart disease. (National Institute of Health Technology Assessment Workshop: Health Benefits of Pets)

* Pets Help to Fight Depression. Pets help fight depression and loneliness, promoting an interest in life. When seniors face adversity or trauma, affection from pets takes on great meaning. Their bonding behavior can foster a sense of security. (Between Pets and People: The Importance of Animal Companionship)

ⁱⁱⁱ Source: Evaluation of Cage Micro-Environment of Mice Housed on Various Bedding Materials, Ellen Smith et al, Contemporary Topics, Journal of the American Association for Laboratory Animal Science, Volume 43, Number 4 / July 2004.