

Solid Waste Management in the Meat Industry

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Thank you for the opportunity to meet with you today about an increasingly important, strategic issue - solid waste disposal. Today, waste disposal is reaching critical proportions in many parts of this country and in Europe. In the U.S., response by federal, state and local regulatory and governmental agencies has been to create stricter regulations.

Here's what we are facing: Each year we generate over 200 million tons of solid waste. That amounts to 3.5 pounds per person per day. Paper is our biggest trash offender. Every ton of paper that is not recycled takes up 3 cubic yards of space in a landfill. Paper and cardboard make up 40% of all solid waste.

We can expect to be faced with an increasing number of environmental regulations. Every state has taken some regulatory action - and every initiative is different. Wisconsin has banned just about every recyclable material known from its landfills. Illinois is considering the ban of food waste. Toronto is charging \$307 per ton to landfill commingled organics.

We are beginning to recognize that the best way to treat our waste in this country is to change our garbage. We must find ways to reuse and recycle it, thereby reducing the amount that eventually goes into landfills.

We must become committed to the correct forms of waste management and make it our way of life. When we think of waste management, we have a tendency to consider each practice by itself. In reality, we should be considering the entire hierarchy - and rank the waste disposal processes that are available.

That ranking is:

- Reduce
- Reuse
- Recycle
- Compost
- Incinerate
- Landfill

Let's take a brief look at each of these now.

Reduce

Source reduction is the design, manufacture and use of products so as to reduce the quantity of toxicity of waste produced when products reach the end of their lives. Several western states, including Oregon, Washington, Califor-

nia and Arizona, have incorporated these requirements in their new environmental regulations.

Now that the states are committed to the Clean Air Act, Congress has renewed its attention of the Resource Conservation and Recovery Act. Under this Act, a federal advisory board is to be established to study methods for source reduction.

In California, where there already is an urban landfill crisis, the state has enacted one of the most aggressive source reduction regulations in the nation. The state's 522 cities and 58 counties must work together to divert 25% of their waste from landfills by 1995 and 50% by 2000. Twenty-eight other states now have set some kind of waste reduction goal—ranging from 15% to 35%.

Reuse and Recycling

Reuse and recycling are compatible processes that most of us are more familiar with. Recycling is one of the Resource Conservation and Recovery Act's top priorities, focusing on the recovery of usable materials, particularly paper, glass and plastics.

According to the EPA, currently only 11% of products that are discarded are recycled. The EPA has set a national goal of 25% reduction of the waste stream through source reduction and recycling.

While most states are following reasonable approaches supported by educational programs, Florida has taken the lead in a campaign to make the food and packaging industries pay for recycling plastic packaging. Similar rulings have been introduced in Europe, and if successful there, may be highly influential in this country.

For example, in Germany a new law was put in place in December specifying that all pallets and boxes made of corrugated or solid carton board cannot be burned or dumped. They must be recycled.

In Belgium, Flemish Environmental Regulations are now in effect. These regulations introduce an order of ranking waste disposal, requiring that reuse and recovering waste must be considered before recycling. France's new packaging recycling law goes into effect in January 1993. At that time, collection systems and acceptable disposal methods must be financed by the respective companies.

Unfortunately, placing additional restrictions on packaging will not solve the waste problem existing in the world. We must be willing to make the commitments and begin tackling the problem - step by step.

Compost

On an individual basis, many of us have become familiar with the backyard variety of composting - using leaves,

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grass clippings and other yard waste. When a material of organic nature cannot be reduced, reused or recycled, it very likely may be composted. In a few moments, we'll discuss that further because it is a process that is highly favored by both environmental groups and government.

Incineration and Landfills

Our remaining other alternatives are incineration and landfills.

Incineration is still available, but the EPA is just as quickly eliminating this alternative by placing so many controls and restrictions on it that incinerators may soon find it difficult to operate. Several states including New Jersey already have banned incineration, while pressure from such strong, influential groups as the Sierra Club, Greenpeace and The Environmental Defense Fund makes it extremely difficult for them to maintain operations.

Landfills are the last stop!

Historically we have used landfills as our major method of disposal. We have considered landfills to be a practical and economical way to manage a town's waste. That remains true today. Out of sight, out of mind.

But, as waste outlets decrease, the price for waste disposal continues to increase, resulting in ever higher tipping fees being paid to landfill operators. In some areas, landfill tipping fees have increased over the last seven years by as much as 600%.

Further, what we did not realize was that much of the landfill waste was not decomposing. It was being preserved intact. For the better part of 200 years, we have just carried waste to the edge of town, dumped it and then forgotten about it. In fact, today 80% of this country's municipal waste is still being landfilled.

Now, some of these dumps and landfills are causing other serious environmental problems, including toxic leachate and methane emission. Long-term environmental liabilities from underground storage and landfills are beginning to haunt processing companies. Hazardous materials that have been buried for 15 to 20 years are providing the fuel for liability claims and lawsuits.

As you know, the meat industry is a highly regulated business, and is subject to changes by state and federal regulations rather quickly. As the waste stream problem intensifies, so will the pressures from the various governmental agencies and environmental groups to impose solutions.

As I mentioned earlier, composting is not as well known as it should be, even though it has been around for a long time - literally forever!!

Standards for Compost Products

Recently Washington State Congressman Al Swift introduced the national Waste Reduction, Recycling and Management Act in the House of Representatives. This proposed legislation requires the EPA to establish standards for all compost products. The bill provides for community-based decision making on matters of solid waste, and identifies composting as an important part of solid waste management.

Our experience has shown that the scope of ecology-based programs has to consider broad categories of products, not just individual items. For example, we came to understand that the spent sausage casing issue was intricately linked to the entire organic waste stream, and since 60% of the consumer waste in the U.S. is organic, a technology to deal effectively with organic waste in total would have enormous value. Composting is that technology!

I'd like to show you a very short tape produced by the Solid Waste Composting Council. This group was formed a little over two years ago and is comprised of waste generators, both public and private, compost producers, consultants, environmental groups, regulatory agencies and university researchers. Our mission is: (1) establish compost standards; (2) promote composting as a solution to solid waste and (3) promote compost use!

One of the biggest boosts that the Solid Waste Management business received was President Bush's recent directive to federal agencies to initiate recycling programs that foster waste reduction and, most importantly, the mandating of composting as an integral part of recycling.

As a result of our work with municipalities and in particular private industry, we have reached the conclusion that composting is currently the long-term solution to America's organic waste problem.

The organic wastes that can be composted are numerous - they include yard waste, garbage, supermarket waste, and most importantly for the meat industry, they include casings, coated cardboard, soiled paper, wood pallets, cafeteria waste and sludge from your waste-water treatment plants - any waste that is organic.

Composting is the ideal process for converting organic waste into a completely new and different product - one that is beneficial to your community.

As previously outlined, landfills throughout the country are filling up and being closed. Incineration, likewise, is being eliminated as an acceptable waste management strategy due to the effects of pollution on our environment. Long-term trailing liabilities are returning to haunt corporate America.

The answer to these problems is to convert your organic waste into "beneficial use products". This is accomplished by composting it, which thereafter eliminates all trailing liabilities.

The history of compost is both ancient and new. We know that compost was recognized by man as early as ancient Rome, and probably before. Composting is a natural biological process that transforms organic waste into a dark peat-like material called humus. I've brought samples of compost for you to see, touch and smell.

As the film pointed out, composting is nature's way of recycling. It can be accelerated through the use of modern technology. Through testing and computer analysis, programs have been developed that utilize the proper amounts of water, oxygen, carbon and nitrogen to accelerate the decomposition process.

The Composting Process

In the next few slides, I will walk you through the actual composting process. The organic waste may either be de-

livered commingled with plastic, glass and cans and then separated at regional materials recovery facilities, followed by composting of the separate organic fraction. Or the organic waste by itself may be separated at its source, which is the way it should be done in the meat processing industry.

The Environmental Defense Fund, and many other environmental groups as well as Compost Management, support and favor the latter method of "Source Separation." This method of separation assures a clean organic waste stream and eliminates the potential contamination from chemical and nonorganic waste materials.

The organic waste is then placed in windrows, or windrow troughs or channels, where the biological decomposition begins. The organic waste is composted through a two-step management process. The steps are an Active Phase of at least 14 days, which assures the greatest organic decomposition through the proper use of carbon/nitrogen ratios, bulking agents, aeration, along with assuring the reduction of pathogens.

The second step is a curing phase of at least 30 days, during which proper aeration and agitation assures the production of quality compost to meet end-users' requirements. Compost that has been correctly processed in the active and curing phases produces a pleasant "earthy humus" odor.

One of the first benefits realized from managing your organic wastes through composting is stabilization of your waste disposal costs. It is important to note that compost

sites need not be designed to just process organic waste from your plant, but can developed into a regional "merchant" facility - one that composts organic waste from other generators throughout your region, both corporate and municipal.

Accordingly, entering into a contract to manage your organic wastes through composting is one way that companies can eliminate their disposal and environmental liability problems. For example, we currently operate a site in Souderton, Pennsylvania. Participants at the Souderton site will include Hatfield Packing, Clemens Supermarkets and Long Acre, as well as leaves and grass from several local communities. The site is one of several regional facilities that we are developing in the Eastern United States to handle source-separated organic waste.

Composting meets or exceeds all federal and state legislation and regulations. It is supported and encouraged by Greenpeace, Sierra Club and The Environmental Defense Fund as an important waste management strategy.

It is difficult to place a dollar value on the goodwill and favorable public relations that your company will receive by utilizing composting as the solution to your organic waste problems. Composting satisfies that desire better than all other alternative waste disposal programs.

I've reviewed the alternatives that are available to you today. There will undoubtedly be more available as time passes. The difficult choice is yours to make. Weigh your options carefully and be aware that composting is one option you may not have considered!

Discussion

B. Demos: What is the feasibility of composting things as large as dead livestock, pigs or broilers?

A. Rattie: There are some potential problems with it. You're really going to have to reduce the size and you're going to have to do that kind of thing indoors; you won't be able to do it in an outdoor facility.

Anderson: What is the potential for production of methane in anaerobic digestion as another means for handling organic waste?

Rattie: Certainly, that's an option, but you're still left with some biomass after methane production. That can go to the landfill, incinerator or go to the compost pile. So by all means, if that's practical and that makes sense, go for it.

Calkins: Relative to the applications for water re-use, do you view each one of those as proprietary? To what extent can your office help establish the protocols that are necessary for approval?

Rose: Each one is viewed as proprietary and we're not allowed to share the specific information. The bulletin we have out on brine reuse grew out of a whole series of brine reuse proposals and data that we got for those, and when it became routine enough, we just published all the parameters. Now if you want to do something different, then you have to submit your own data. We're trying to accumulate enough information so it becomes fairly routine as a policy and then publicizing it for the world. We have another group that I didn't mention that just deals with making recommendations as far as water policy. It is called the Policy Review Group. If water proposals come in that we don't think fit our policy right now, but they have a lot of merit, we pass all that data on to the water policy review group and take the recommendation to our administrator.