

Roll press



Sand dewatering screens



Bedding dryer



Air-drying	
Description:	The most common conditioning method involves using payloaders to repeatedly move separated sand or manure into piles. The top layer is allowed to dry, then piles are turned to expose bottom layers so moisture can evaporate or leach away.
Pros	<ul style="list-style-type: none"><li>• An effective method for drying washed, separated sand or manure solids</li><li>• Affordable, since it uses equipment which is already present on the dairy</li><li>• Simple and easy to do; no special training required</li></ul>
Cons	<ul style="list-style-type: none"><li>• Waiting for moisture to evaporate or drain can be very time-consuming. Researchers at the University of Georgia recommend leaving piled sand out for at least a month. Even then, pathogens may still survive; Mycoplasma mastitis bacteria have been found alive in piled sand after eight months. To speed up the drying process, make smaller piles, rake or windrow the material, and spread it out to increase surface area.</li><li>• Tying up bedding material in inventory is costly. The value of storing sand inventory for 1,000 cows for just 30 days (assuming a sand use rate of 50 pounds per cow, per day, at \$15 per ton) is \$11,000.</li><li>• Inventorying sand piles requires a large footprint. Some dairies just don't have the space.</li></ul>
Best for:	Dairies with sufficient labor to adequately condition sand and manure solids, and adequate storage space for bedding inventory.
Roll pressed and screw presses	
Description:	Presses are used to further reduce moisture in solids removed from the manure stream. Separated fibers are typically fed into the press from a rotary drum.
Pros	<ul style="list-style-type: none"><li>• Very effective; some models have been shown to reduce moisture in manure fibers from 88 to 70 percent</li><li>• Requires only a small footprint</li><li>• Low capital cost</li></ul>
Cons	<ul style="list-style-type: none"><li>• Additional air-drying and inventorying of material may be required to bring moisture content down to optimum levels.</li></ul>
Best for:	Dairies bedding on manure solids, looking to reduce labor and inventory requirements of air-drying.
Sand dewatering screens	
Description:	Dewatering screens are an interesting technology originally introduced in the mining industry. A vibrating screen physically shakes water and organic matter off sand grains in the last step of a sand-manure separation system.
Pros	<ul style="list-style-type: none"><li>• Can reduce both moisture and organic content in sand by up to 50 percent</li><li>• Can be used with a sand lane system to further reduce labor in moving sand piles, drying time and inventory costs</li><li>• Compact space requirements</li></ul>
Cons	<ul style="list-style-type: none"><li>• Can be used only with sand bedding</li><li>• Some additional drying time may be necessary to achieve optimum moisture content levels.</li></ul>
Best for:	Dairies with an existing sand management system looking to improve efficiencies, reduce SCC and improve milk quality.
Bedding dryer	
Description:	Bedding dryers are a newer technology and a real game-changer for the dairy industry. Sand or manure solids are quickly heated to the programmed exit temperature, then retained just long enough to remove moisture and kill pathogens. The finished product can be used immediately after discharge for a virtually endless supply of clean, dry bedding.
Pros	<ul style="list-style-type: none"><li>• Can be programmed to achieve almost any targeted moisture content</li><li>• Works quickly and efficiently, drying up to 90 tons of sand and 18 tons of manure solids in one hour</li><li>• Eliminates time and labor costs associated with traditional air-drying methods</li><li>• Can be powered with natural gas, propane, diesel or biogas</li></ul>
Cons	<ul style="list-style-type: none"><li>• Expensive compared to other bedding drying methods</li><li>• Requires a large, dedicated, interior space to accommodate the dryer, ductwork, motors and control panel</li><li>• Requires operator training</li></ul>
Best for:	Large dairies with an existing sand or bedding fiber management system, looking to invest in technologies to maximize sustainability while improving cow health and milk quality.