



Heavy rains mean the 80 by 25 ft. manure pit under the "roofless" feedlot must be emptied more frequently.

CATTLE STAY CLEANER, HEALTHIER

"Roofless" Feedlot With Slatted Floor

By Pat Smith

It's unusual to find a slatted floor in an open Ontario feedlot but Bob Ballantyne and Doug Maus like theirs.

Six years ago these partners installed a manure pit and slats in part of their Ayr, Ont. feedlot as an first step to build a slatted floor barn.

However, they discovered it wasn't necessary to cover the slats and that's the way it is today.

While it works well, both men quickly point out they wouldn't recommend the idea to everyone, particularly in areas of heavier snowfall. They run approximately 180 head of cattle on the open slats, 180 head in the rest of the yard with an open-front barn and 500 head in a covered slatted barn.

There are several reasons why the slatted yard concept has worked for them. The key is they also have the open-fronted barn to turn to if weather conditions turn bad.

"I would not use such a system without a backup barn," explains Maus. "It wouldn't be humane. We use the slats year round and know they work, but there have been several occasions when we had to take the cattle off the slats in sleet storms. That kind of weather is very hard on cattle."

Heat Causes Stress

Heat stress is more of a concern than cold stress. "Cattle are more susceptible to heat, especially heavy cattle," said Maus. Although the yard does not have any direct shade to protect it against the heat in summer, it is situated where there is a fair breeze blowing through it.

"We have moved the cattle off the slats once or twice in periods of very hot weather but we don't let them have the run of the conventional barn," said Ballantyne. "You have to keep them on the slats constantly or the manure will build up."

The breeze, so beneficial in summer, is not appreciated in the winter. A plywood windbreak was erected to provide some extra protection. One of

the problems with keeping cattle on the slats in winter is a build up of ice. However, a full pen, the windbreak and a sunny day take care of that.

"As soon as the sun is out, the slatted area is dry. With the conventional open yard there is a pile of mud and manure when the ice starts to melt," said Ballantyne.

Maus figures they saved approximately \$70 per head in capital cost at the time they installed the slats by not putting a roof over them. He admits that feed requirements are higher in cold weather but feels the initial savings far outweigh the extra feed costs. Since Maus also runs cattle in a slatted floor barn and open-front barn he knows what he's talking about when he says, "We get our best gains from cattle on the open slats."

Management varies with the seasons. In the winter they pack a few more cattle onto the slats and in summer reduce numbers. Heavier cattle do better than light calves on the slats in the winter and the opposite is true in summer.

Both partners agreed that cattle are a lot cleaner on open slats (than on covered slats) because they're exposed to the sun and rain. Health appears to be improved, too. "We don't have records to prove it but health problems are minimal on this set up," said Maus.

The manure pit was constructed with a ramp leading down underneath the slats in case there were problems emptying sediment. "The ramp is something that we would never include again," said Ballantyne. "It creates a draft of cold air up under the slats in winter which contributes to the ice problem."

"If a feeder wants to change from a conventional feedlot to a slatted floor barn, he could build it in stages over a period of years," said Ballantyne. "This might be a way of doing it."

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The Under Planter cuts out weeds, but leaves straw and stubble as an erosion-proof mulch.

PLANTS BEHIND AN UNDERCUTTER PLOW OR CHISEL FOR BETTER SEED PLACEMENT

"Under Planter" Uses New No-Till Design

Digging through dry Kansas stubble requires a tough no-till planter that places seed into the best available moisture while applying insecticides and fertilizer. Kansas State engineers say they've got a machine that does that better than anything on the market with their new no-till Under Planter which has already been bought up by a manufacturer — Flex King, of Quinter, Kan. — and is slated to be on the market sometime next year.

Unlike other no-till planters, the Under Planter tills with an undercutter plow. Each undercutter blade is followed by an independently floating seed tube which actually forms a small underground tunnel to drop its seed in as it trails through the freshly dug dirt.

"This eliminates the narrow slot or furrow that most no-till planters make. When you have a slot, straw and other residue is often pushed down into the seed trench, where it robs moisture from the seed. We get more soil-to-seed contact with our method," says Stanley J. Clark, professor of ag engineering who worked with graduate student Don Suderman and others to develop the planter.

The undercutter plow is a good tool for no-till, the engineers believe, because it cuts out weeds and leaves straw or stubble for erosion protection, in effect mulching the ground. Clark notes, however, that the planting system should also work well behind a chisel plow.

A conventional International Cyclo planter, with slightly altered drives, is mounted on the undercutter framework above three undercutter plows on 5-ft. centers. There's a coultter at the point of each of the six 30-in. spaced blades. Liquid fertilizer tanks and insecticide containers are mounted next to the planter.

The fertilizer tubes run to the deepest point of the plow blade where the fertilizer is banded below the seed trench. The seed and insecticide tubes are mounted on a free-floating hinged bracket that rides about 3 ft. behind the plow blade. Each row's bracket moves up and down independently on its own hinged bracket, with depth controlled by a gauge wheel, also attached to the bracket. "This is the key to the design, in that it lets the planter maintain even planting depth independent of the depth of the plow and regardless of the varying terrain," explains Clark. Two press wheels, mounted directly above the point where the seed is injected into the soil, ensure a tight pack.

With side-mounted herbicide tanks on the tractor, the planter becomes a one-pass planter. Fertilizer injection below the seed encourages roots to grow down to moisture in dry years.

"The entire planter has relatively few moving parts and the planting components could be removed so the plow could be used just for tillage. In the same way, the Under Planter could be manufactured as an add-on for farmers who already have an undercutter or chisel plow," says Clark.

He notes that the Under Planter worked well last spring, particularly for planting sorghum in wheat stubble.

Jim Boone, President of Flex King, says the company plans to build several prototypes and test them thoroughly before going into full production, hopefully sometime in 1982.

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