

# Farm Structures FACTSHEET



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## RUBBER MATS FOR DAIRY FREESTALLS

What is the effectiveness of various types of rubber mats that are available today? Claims of significant advantages are made in sales literature such as the following:

1. Rubber mats keep cows off cold concrete stall floors to keep the cow's body heat from dissipating.
2. Mats provide a softer, elastic surface to reduce incidence of leg and knee problems.
3. Mats reduce moisture accumulation in stalls for more sanitary conditions.
4. Bedding and labour costs can be reduced since stalls with mats require less bedding and are easier to clean.

There are different types of rubber mats with different textured or grooved surfaces and different rubber compositions. Some mats are made of homogenous, smooth-surfaced rubber and others are manufactured from reprocessed rubber and have a slightly textured surface.

The Resource Management Branch had installed four different types of mats into a single row of free stalls. The mats were observed over a period of several months and the following conclusions can be drawn.

1. Rubber is a poor thermal insulation material. It has the same thermal conductivity as solid wood. Cows will not be warmer on rubber mats than they would be on an equivalent depth of compressed sawdust bedding.
2. Evidence in this and other mat trails indicate that a cow will always prefer a deeply bedded

stall without a hard surface. Cows will choose a stall that has deeper bedding, regardless of the presence of a mat on a hard surfaced stall base.

3. Mats do not reduce moisture accumulation in the stalls. Only proper maintenance of the bedding and a properly designed stall reduces the moisture accumulation.
4. Bedding costs can be reduced by 50% with the use of mats without significantly affecting cleanliness of cows. In this and other trials, it was found that the average bedding usage was 4 to 5 lbs per stall per day with mats and 8 to 10 lbs per stall per day without mats. This offers the dairyman a potential saving of about \$20.00 per stall annually.
5. The surface texture of the mat does not appear to be a factor in cow preference or safety. Provided that the mat is covered at all times with bedding, cows are not likely to slip on the mat nor do they appear to have difficulty getting up. If the mats are wet then the most slippery mat was variety No. 3.
6. Cows do not appear to be dirtier on lightly bedded mats provided that bedding is maintained. The cleanliness of cows is most dependent on cleaning alleys and maintaining clean stalls.
7. Bedding should be used with mats to prevent abrasions and joint swelling.
8. Mats used in this trial were made of non-porous rubber and did not absorb water. All mats remained dimensionally stable during the course of observation (approximately 1 year).
9. Mats should be firmly secured to the concrete stall base by embedding them in the freshly

poured stall base or by securing them using at least six concrete anchors. (recommended is the 1/4" x 2" nylon tap-in anchor) Perhaps the most important factor in selecting a variety of mats is its cost per unit. The local product manufactured by North West Rubber Mats Ltd. in Pitt Meadows, is at least 30% lower in cost of the four varieties tested (considering all costs, including shipping and excise taxes).

## Mat Varieties Tested

1. Grooved surfaced mat by UBO of the Netherlands. (similar to J.J.J.).
2. Stippled surfaced mat by ACE Rubber of Wisconsin (similar to the Kraiburg and Agromatic mats).
3. Wide, flat grooved surfaced mat by ACE Rubber of Wisconsin (similar to Agromatic, Linear and Strongline mats).
4. Vulcanized rubber (repressed, molded) mats by North West Rubber Mats Ltd. Pitt Meadows (similar to Humane Mats).

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### FOR FURTHER INFORMATION CONTACT

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