3 Summary

The size of the Swedish dairy farms increases and also the demands for rational management of the herd without affecting the animal welfare enhance. One way to handle the manure in the cow shed alleys is to have automatic scrapers. In this system the scraper has to get rid of the manure somewhere. The most common way of doing that today is to let the scraper deliver the manure under some kind of gate or covering over the manure culvert. When the scraper goes under the gate or the covering there is a risk of squeezing animals and farmer. If the culvert instead is covered with a manure draining grid the hazard will be minimized.

Today there are no regulations of how this kind of grid shall be designed. The closest regulations are the ones from the Swedish Board of Agriculture (Statens jordbruksverksföreskrifter om djurhållning inom lantbruket m. m., SJVFS 2003:6) about slatted floor. The aim of this thesis is to collect facts about how this kind of grids should be designed in order to create a good function and animal welfare.

In this thesis the function of different kind of grids were studied as well as the animal behaviour on the grids. The function was tested by letting automatic scraper shove manure over the grid. The manure was weighed before and after the scraper crossed the grid. Even the consistent of the manure was measured before the scraper crossed the grid. The result is presented as per cent drained manure for the different grids. The animal reaction to the grid was tested by letting the cows choose between the grid and a solid floor.

The result of the study is that the mechanically self-cleaning grid has the best function. This grid was not so affected of the consistent of the manure as the other. If minimizing the time the self-cleaning grid works the grid will give no substantial effect on the animal well being. In order to minimize the grid working time, the scraper and the grid must work as a system, i.e. the grid should only work when there is manure on it, thus just after the scraper has delivered the manure. The deliver of the manure must be on the grid, i.e. the scraper should not cross the grid, but should stop at the border of the grid.