SUMMARY

This study is a review of existing literature within two fields: outdoor cattle housing in Sweden and their dwelling areas as well as geo-textile materials and their applications. After every subject discussed is followed by a brief summary which concludes into composite problem descriptions with possible solutions followed by questions which these solutions ought to find an answer to.

The aim has been to describe the environmental load from outdoor dwelling places and the consequences outdoor animal housing may cause and serve as guidance for contributions to solve some of the problems that occur. The review of geo-textile material is showing possible material combinations and how these could be used with the aim of constructing a drained pad that is able to carry the animal, divert the manure contaminated rain water and prevent nutrient discharge into watersheds.

The number of suckling cows has increased to 165 000 in 2004, while the dairy cow number has decreased to ca 400 000 cows. A careful estimation shows that approximately 15-20 % of the Swedish suckling cows are housed outdoors all year around, which corresponds to 25 000 – 33 000 suckling cows. Outdoor housing contributes to greater mobility among the animals during all year and by that a more natural behaviour and greater animal welfare. Grazing animals are a beautiful element in the landscape providing an open landscape. The grazed land also offers the possibility to preserve biological diversity and recreation on land that are within densely populated areas.

Outdoor housing of cattle creates manure contaminated areas caused by the fact that ruminants defecate and urinate at the place of their momentary residence, which means that the manure contaminated areas are in a large extent governed by where and for how long the animals reside and the herd size. During the grazing period the grass sward condition can be managed by dividing fields into folds and fold rotation. It is also important to keep the grass sward intact to be able to absorb the input of nutrients. For dairy cows beaten and manure loaded areas occur, often as a result of queing, at entrances and exits on their way to and from pasture and at water-bowls. The manure load on these areas can cause nutrient leaching, less udder- and claw cleanness.

During the feeding period in the winter season the outdoor dwelling areas of outdoor housed animals will be totally governed by where and how the feeding takes place. If the animals have a shed, water- and feeding places, their major dwelling areas will be in the neighbourhood of these, that is the manure loaded areas will appear in- and around the shed, water- and feeding places and on the transport areas in between. These common manure loaded areas without roof will be exposed for precipitation which means that manure contaminated rainwater will flow away as runoff or be drained into the ground. If the common areas are drained and the system connected to a local piped drain system the nutrient will be discharged into a watercourse and classified as a none definable discharge. Even in the period after when the area is not housing any animals the accumulated nutrient storage in the ground will continue leaching nutrients into the draining system.