



DISARM has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 817591

## Housing and Welfare

An environment which meets animals' needs, limits stress and inhibits infectious disease is another important factor in maintaining high animal health and welfare standards.

## Housing Systems

When improving existing facilities or designing a new building, focusing on optimizing animal health and comfort can facilitate animal management and reduce occurrence of injuries and disease.

Accommodation must provide for animals' needs and should consider how they experience the space, as well as how building design and layout can facilitate easy management and sanitation for disease control. Building materials and flooring can be chosen to facilitate easy disinfection and avoid causing injuries to animals and people. Appropriate temperature, ventilation and drainage are key to achieving optimal climate and air quality in a building by removing dust, airborne pathogens and moisture where microorganisms thrive. It is also important to allow enough space to avoid overstocking and ensure that all animals have adequate access to food and water of good quality, space to move around and rest comfortably with appropriate social contact. Improving housing facilities can help streamline management practices to reduce stress of both animals and stockpersons.

## Environment

Providing animals with a clean, dry, comfortable environment which provides for their physical, social and mental needs can improve production, health and welfare by reducing negative stress.

Using appropriate disinfectants, bedding and flooring substrates is important for maintaining clean, dry, comfortable housing. Management routines that include regular cleaning, removal of waste and topping up of clean, dry bedding and litter materials can help limit disease transmission. Animals should be provided with adequate space and facilities in which to rest, exercise and perform species-typical behaviours. Suitable social and environmental enrichment encourages rewarding physical and mental stimulation and grooming activities which can buffer the effects of stressful situations and reduce abnormal behaviours and associated injuries. However, it is important to consider how to provide suitable social environment without compromising health e.g. by avoiding overstocking, keeping social groups stable, and adhering to good hygiene and biosecurity measures. Providing an environment in which animals are happy, comfortable and content can contribute to lower susceptibility to disease and easier management.

## **Group Management**

Effective management of animal groups ensures animals have appropriate social contact whilst minimising the risk of injuries and disease thereby reducing the need for antibiotic treatments.

When grouping animals, there should be adequate space to avoid overcrowding and animals should be regularly observed to identify early signs of illness or other problems. Ideally, stable groups should be maintained - mixing animals from different groups should be avoided and young animals should be kept separately from older animals. When moving animals, allow time to clean, disinfect, dry and rest enclosures to reduce pathogenic load before introducing the next group of animals. These principles are used in all-in/all-out farm systems but can also be applied to specific aspects of animal management – they are particularly worthwhile when rearing young animals which are more susceptible to infection due to their immature immune systems. Stockpersons should also consider their walking routes to ensure they move from young to older animals or change footwear and protective clothing when it is necessary to visit young animals after dealing with adult stock. Adhering to all-in/all-out production principles is an effective method to limit the spread of infectious diseases, reducing treatment and labour costs by maintaining healthy groups of animals.

