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   Sommario/riassunto   In livestock species, breeding goals are aimed primarily at improvement of production traits. However, there are a number of examples where selection for high production efficiency has resulted in reduced welfare through unfavorable outcomes in health and fitness characteristics. These effects raise questions about what is ethically acceptable in animal breeding. Welfare problems may be experienced when physiological balance is disturbed by genetic selection for high production alone, by a mismatch between the environmental challenges and the range of coping responses available to an animal, or from a mismatch between the animal's needs and their degree of satisfaction. This may be resolved by either improving the environment to support the animal, but also by providing the animal, through genetic selection, with means to adapt to the production environment. The Standing Committee of the European Convention for the Protection of Animals kept for Farming Purposes emphasizes that breeding goals should include health and welfare. The Farm Animal Welfare Council pleas for a greater emphasis in breeding programs on traits associated with good welfare. However, although breeding goals in most farm animal species have been broadened beyond production traits to include functional traits, behavioral traits are rarely included despite their potential to improve animal production and welfare. It is the goal of the present Research Topic to bring together experimental and theoretical research focusing on the genetics of welfare traits and the possibility to improve

animal welfare through selection. This topic presents an overview of the relationship between selection for high production and livestock robustness, examples of improving robustness through the introduction of novel traits in livestock breeding, and a discussion on selection methods to address welfare issues. The discussion on sustainability of breeding practices is very alive today and will remain to be an important part of the debate in the future.