عنوان مقاله:

An Application of Association Rule Mining in Animal Sciences: Mining the relationship between Chemical Composition of meat and Breeding levels

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خلاصه مقاله:

The need to reduce the fat content of the carcasses of meat-producing species have motivated research for finding ways of producing carcasses with lower levels of fat. Determining chemical carcass/body composition of animals and its relationship with breeding programs and levels of feeding are major problems considered by researchers in this field. In this article Association Rule Mining technique is applied to identify patterns of interest in our dataset (i.e., sheep dataset). Association rules can reveal relevant associations between different breed or feeding levels of sheep and fat amount of meet or other chemical composition of meat in most carcass cuts and carcass meat. Since our sheep dataset contains quantitative attributes, we cannot directly apply binary algorithms. Therefore, we either have to transform the quantitative problem into binary one or to use Fuzzy Association rule mining. We have used fuzzy association rules mining to deal with both continuous (numerical) and discrete (nominal) attributes in our dataset. We found numerous useful rules in the data. A cursory analysis of some of these rules reveals numerous associations between amount of certain chemicals in different part of carcasses, many of which make sense to animal scientists, others suggesting new hypotheses that may warrant further investigation.

کلمات کلیدی:

Association Rule Mining, Fuzzy sets, Fuzzy association rule mining, Chemical Meat composition

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