ECONOMIC MODELLING OF DAIRY FARMS REGARDING MASTITIS

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Last year we reported our first results on our investigations of the profitability of cows that were just diagnosed with mastitis. Our conclusion was that based on nationwide data of dairy farms, we can build a suitable stochastic model, and its extensive microsimulation can suggest us a much better decision concerning the selling or keeping of the animal. The simple program that is capable to solve such problems with available input data can be downloaded for smart phones and tablets (having Android 6.0 or newer operating systems) from

www.inf.u-szeged.hu/~banhelyi/Buu

This time we extend our model giving more details regarding the lactation curve, and we utilize the amount of produced milk as a basis of decision on selling or keeping cattle. Also, we enrich our model to cover a full dairy farm with many cows. Here we take into account also the dependent stochastic variables related to infections, or similar disasters harming many cows the same time. We also consider the wide picture of the summed up economic profitability of the farm with respect to managing the cattle population actively. In the conference talk we shall report on the first results obtained with the new model that confirm our research expectations in terms of improvement of the business decision. The ongoing research will focus on a decision support system based on data mining technology that can utilize the peculiarities of the actual dairy farm in question, and to validate the additional advantage arising from using such a system.

References

1. Economic modelling of the transition from a travel times based to a travel time based ticket system. Research Report for the Szeged Transportation Inc., in Hungarian (Az utazásszám alapú jegyrendszer

időalapú jegyrendszerré történő átállításának gazdasági modellezése), KNRet, Szeged, 2010.
2. Bernát Almási and Endre Palatinus: Computational modelling of the economic effect of the travel time based ticket system (In Hungarian). Student Reseach Competititon (TDK) University of Szeged, 2010.
3. Balázs Bánhelyi, Tibor Csendes, Abigél Mester, Józsefné Mikó, and J. Horváth: When to sell the ill cow? Review on Agriculture and Rural Development 6(2017) 10-14.