

〈 Summary 〉

Purpose& Contents	<ul style="list-style-type: none"> ○ Explore the possibility of genetic improvement for the disease resistance by the indicator traits of this disease, measurements of ketone bodies in milk sample ○ Analysis of economic impact, and the estimation genetic parameters and the development of selection index ○ Estimate the genetic parameters for concentrations of β-hydroxybutyrate (BHBA) and acetone in milk, as indicate traits of clinical or subclinical ketosis ○ Development of the early ketosis diagnosis programmes for farmers using milk test data ○ Genomic and proteomical analysis of ketosis mechanism and introduction of candidate drugs ○ Simple ketosis diagnosis kit development 				
Results	<ul style="list-style-type: none"> ○ Indices of ketois for production costs, milk income and net income index made ○ Estimate the genetic parameters, using an animal model ○ Analysis and evaluation of BHBA and acetone measurements in milk developed for the efficient selection on ketosis resistance ○ Establishment of databases for the collection of milk test data and BHBA ○ Inspection and analysis for feeding management of livestock by milk test data ○ Development of candidate drug for improving ketosis resistance: Identification of molecular signaling and biochemical signaling mechanisms using ketosis cell model ○ Manufacture of early prediction and diagnostic Ketosis kit for precise inspection 				
Expected Contribution	<ul style="list-style-type: none"> ○ Test-day records of milk production traits would make possible to handle the management risks at farms ○ Service software for farmer including ketosis indices on the economic items can make cows possible to be individually evaluated ○ Elaborate and accurate system of collection, analysis and evaluation of BHBA and acetone measurements in milk through the indicator traits ○ Through the development of the early ketosis diagnosis programmes, utilization for the continuous ketosis management of cattle herds by farms and on-the-spot guide by experts ○ Decrease in treatment cost and increase in productivity through the early diagnosis and prevention of semi-clinical ketosis ○ Development of early diagnosis technology of ketosis by developing a diagnosis kit 				
Keywords	ketosis	ketone bodies	indicator traits	genetic parameters	selection index