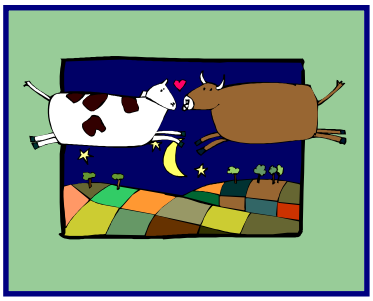
EXSYS Case Study

Cross Breeding System Increases Gross Margin by 50%



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Beef farmers in response to changing market conditions and to improve production efficiency can use planned cross breeding from two or more breeds. With an appropriate choice of breeding system and breed combinations, gross margins can be increased by up to 50% in some environments. In the well over $3 billion Australian beef industry, an increase of only 5% is worth $180 million.

Effective cross breeding strategies require an expert knowledge of genetic variation between breeds in traits such as growth rate, maturity, ease of calving, calf survival, disease resistance, milk production, temperament and fertility. The task is further complicated by the interaction of genetic and environmental factors and by management constraints.

This knowledge, captured in a knowledge automation system X-Breed, is used to improve the most sought after traits while avoiding a negative effect on other desirable traits. X-Breed was built to assist professional livestock advisors in their task of planning a cross breeding strategy for beef farmers. The system guides the user through an "expert" consultation resulting in a number of ranked recommendations that provide a cross breeding strategy for their farm. The knowledge automation system is made up of data sharing modules, which selects the breeding system and makes calls to other data sources for tasks that are outside its domain. A blind validation test showed that X-Breed performed at a level equal to that of a domain expert and significantly better than seven out of eight professional advisors.