Risk management in production decision refers to the strategic management of inputs and outputs in times when production process is at risk. This risk may be due to price risk (where market prices are unknown at the time of input decisions) and/or natural risk such as unanticipated weather or machine breakdown. Production decisions affect the risk level and hence have a very important role in risk management. Optimal decision-making requires the resulting profile levels to be defined and the preferences over these outcomes be applied to rank alternative input-output combinations. In situations where decision makers are challenged to choose between alternative actions poses problem in decision-making. Economic theory has mostly been developed for analyzing decisions under certain conditions with known outcomes. However, real challenge lies in making risk management decision in the face of uncertainty. That is, when the outcome of particular action is unknown to the decision-maker.