

基于Bayes方法的节水灌溉产品质量抽样检验方案研究 Study and Application on Sampling Test Plan of Water-saving Irrigation Products Based on Bayes Method

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摘要: 利用节水灌溉产品质量抽样检验先期数据和经验, 构建基于Bayes方法的节水灌溉产品质量抽样检验方案, 利用该方案对塑料管材和滴灌灌水器以及旋转式喷头进行产品质量检验的新样本抽样。结果表明, 产品检验样本量降低率E主要与先验产品合格率方差S2R和先验产品合格率均值Ra有关, 对小于1200的常用产品批量, S2R=0.002和Ra=0.95下的塑料管材和滴灌灌水器以及旋转式喷头的产品检验样本量降低率分别高于62%和85%。基于Bayes方法的节水灌溉产品质量抽样检验方案, 可在保证与现行常规产品质量抽样检验效果相同条件下, 使产品质量检验新样本的抽样数量降低20%以上, 从而达到有效减少抽样数量、降低检验成本、提高检验效益的目的。The Bayes method sampling plan of water saving irrigation products was established by using the prior data and experiment. The Bayes sampling plan results of plastic pipes, micro irrigation emitters and rotating sprinkler were collected and showed the sample decrease ratio E mainly had a relationship with prior product qualified ratio variance S2R and average Ra. In normal lot it was less than 1200, if S2R=0.002 and Ra=0.95, sample decrease ratio of plastic pipes and micro-irrigation emitters was higher than 62%, also sample decrease ratio of rotating sprinkler was higher than 85%. Compared with normal sampling plan, the Bayes sampling plan could reduce the sampling number more than 20% in the condition of same inspection effect; therefore the Bayes sampling plan reached the purpose of reducing the sampling number, lowering the inspection cost and increasing the inspection benefit.

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