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水禽自动饮水装置研制与应用效果试验

Development and experiment on application effects of automatic drinking device for waterfowl

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中文摘要:

为了满足水禽集约化饲养的饮水需要, 该文选用PVC管、浮球等材料研制了一种水禽自动饮水装置, 并以樱桃谷种鸭为对象进行了应用效果试验。当水位降低到一定程度时, 水自动流出, 浪费极少, 种鸭单位饮水面积大(8.7cm²/只), 鸭饮水自如, 能保持鸭嬉水的天性。比较了该自动饮水装置(第1组)与现存的乳头式饮水器(第2组)、普通水槽(第3组)和普拉松饮水器(第4组)的购置成本及折旧费, 研究了同等饲养条件下4种饮水器的耗水量及对种鸭生产性能的影响。18684只父母代SM3樱桃谷种鸭随机分为4组, 每组3个重复, 每个重复1557只(母鸭1289只; 公鸭268只)。试验期为25~75周龄。试验结果表明: 第1组饮水器的购置成本最低, 每只种鸭为0.59元, 其它3个组分别为1.25、0.69、2.27元, 第1组饮水器的折旧费也最低, 每只种鸭每年0.13元, 其它3个组分别为0.24、0.14、0.49元。第1组耗水量为1.72 kg/(只·d), 高于第2组的1.18 kg/(只·d)和第4组的1.48 kg/(只·d), 低于第3组的2.31 kg/(只·d)。第1组试验期内存活率为91.8%、产蛋率78.3%、种蛋合格率93.70%、受精率92.30%, 均高于第2、3、4组。本文所研制的水禽自动饮水装置既能提高种鸭的生产性能, 又比其它装置成本低, 使用方便, 极具推广前景。

英文摘要:

Abstract: A new automatic drinking device was designed according to the living habits of waterfowl (ducks), which was made with PVC pipes, floating balls, and other materials. The devices had better performances and advantages, such as more water area and deeper groove, auto-control of water amount by float ball to meet the needs of intensive rearing of waterfowl (ducks) comparing with the other three devices: nipple drinkers, ordinary water tanks, and the Plasson drinkers. To further observe the effects of the new automatic drinking devices on production performance in duck breeders, 18 684 SM3 cherry parent ducks were randomly allocated into four groups with three replicates, including new drinking devices (group one), nipple drinker (group two), ordinary water tank (group three), and the Plasson drinker (group four). Every replicate had 1 557 ducks (females 1,289; males 268). The purchase cost and depreciation cost of the four drinking devices, water consumption and production performance of ducks under the same feeding conditions were statistically analyzed from the ages of 25 weeks to 75 weeks. The results showed that the purchase cost of the drinking device in group one was 0.59 ¥ per duck, which was the lowest among the all of the groups (0.59 ¥ vs 1.25 ¥ or 0.69 ¥ or 2.27 ¥); and the depreciation cost of 0.13 ¥ per year in group one was the lowest among the all of the groups, too (0.13 ¥ vs 0.24 ¥ or 0.14 ¥ or 0.49 ¥). The water consumption per duck per day in group one was more than that in group two and in group four (1.72 kg ± 0.03 kg vs 1.18 kg ± 0.04 kg or 1.48 kg ± 0.03 kg), but less than that in group three (2.31 kg ± 0.08 kg). The survival rate, egg laying rate, egg average qualified rate, and egg average fertility rate in group one were all higher than those in other groups. In conclusion, the new drinking devices could be applied widely in the intensive rearing of waterfowls with the advantages of improving production performances of ducks, lower purchase and depreciation costs, and being easy to operate.

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