Effect of storage time and phosphorus fertilizer on seed germination in alfalfa

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In order to investigate the influence of storage time and phosphorus fertilizer on seed quality of alfalfa (Medicago sativa L.), an experiment was carried out in 2014. Alfalfa seeds were harvested in 2011, 2012, 2013 and 2014 from the experimental plots with three phosphorus fertilizer treatments (P2O5, P1-0, P2-90, P3-270 kg/ha), respectively. 100 alfalfa seeds with four replicates from every treatment were randomly selected to do germination test. The results showed that the highest normal seedlings rate, the lowest abnormal seedlings rate and the lowest hard seed rate was observed on seeds stored for three years (harvested in 2011), while alfalfa seeds harvest in 2014 had the lowest normal seedlings rate, the highest abnormal seedlings rate, the highest hard seed rate and the highest dead seed rate. In addition, P3 had the highest hard seed rate and the lowest dead seed rate. There was no significant difference among normal seedlings rate and the abnormal seedlings rate in three phosphorus fertilizer treatments. In conclusion, hard seed rate decreased with an increase in storage time and phosphorus fertilizer could increase hard seed rate in alfalfa.