

SUMMARY

WIDYA NURUSSINTANI. 0810480109. Seeds Dormancy Breaking Treatment on Germinatin 3 Varieties of Peanuts (*Arachis hypogaea*). Supervised by Dr. Ir. Damanhuri, MS. and Ir. Sri Lestari Purnamaningsih, MS.

Peanut (*Arachis hypogaea*) is one of the major food crops besides rice. Indonesian peanut production in 2010 amounted to 779.228 tons. This production just increase by 1.34 tonnes of production in 2009 in the amount of 777.888 tons (BPS, 2010). Harvested area and productivity of growing peanuts, should be supported by the fulfillment of the availability of high quality groundnut seeds are planted by seed producers. Therefore, handling and preparation efforts seed before planting needed to be done. This is to avoid problems when peanut seeds as food at the farm level. According to the data from the results of laboratory tests UPT PSBTPH (2009) East Java, concerning seed growing test, it was found that there were still many dormancy seeds which didn't grow. Treatment of dry oven for 7 days at 40°C at peanut seed Kelinci varieties is less effective and efficient in terms of processing time, so that it is necessary to innovate peanut seed dormancy breaking method more effective and efficient than the existing ones. This study aimed to find a method that is more effective and efficient than treatment of dry oven to 7 days (recommendation ISTA (*International Seed Testing Association*)), and to study the effect of different varieties on dormancy breaking treatment. The hypothesis in this study is a method of breaking dormancy are more effective than oven dried to 7 days (on ISTA (*International Seed Testing Association*)), and there are different responses between varieties of the dormancy breaking treatment.

The research was conducted in the laboratory and greenhouse UPT PSBTPH Surabaya, East Java from June to August 2012. The tools used were sacks, analytical scales, ovens, calculators, sandbox, trowelok, shovel, watering can, sieve, paper label, measuring cups, thermometer, dark bottles, stirring spoon tweezers, a camera and stationery. The materials used are local varieties of groundnut Tuban, Bison and Kelinci with foundation seed (BD) and stock seed (BP), sand, water, solution of KNO_3 0.2%, coconut water, a solution of 2,3,5 tetrazolium triphenil clorida and distilled water. The study was conducted using a randomized block design (RBD) with 2 factors and 4 replications. The first factor is the peanut varieties with 3 level (V1: Local varieties Tuban, V2: Bison varieties, V3: Kelinci varieties). The second factor is 6 dormancy breaking treatment, namely: (P0: control without treatment, P1: soaked in KNO_3 0.2% for 48 hours, P2: soaked in coconut water for 48 hours, P3: dry oven temperature of 40°C for 7 days, P4: dry oven temperature of 40°C for 7 days then soaking it into KNO_3 0.2% for 48 hours, P5: dry oven temperature of 40°C for 7 then soaking into coconut water for 48 hours). Variables include the observation of seed

moisture content, germination seed, seed viability, dormancy intensity, seed vigor index and normal dry weight of normal plant. Data analysis using Duncan multiple rate test at level 5% to detect differences between treatments.

The results showed that dormancy breaking treatment gave significant different effect on observation parameters of normal, abnormal, non viabel seeds, dormancy intensity and seed vigor. Methods of soaking seeds with 0.2% KNO_3 solution for 48 hours (P1) showed the effectiveness of the same method on ISTA (*International Seed Testing Association*) and more practice in the implementation, with a thresholds germination seed testing more than 80% and the total of seed dormancy less than 5%. Lokal Tuban and Bison varieties give good respon to treatment P1 (soaked in KNO_3 0.2% for 48 hours) , P2 (soaked in coconut water for 48 hours) and P3 (dry oven temperature of 40°C for 7 days), but Kelinci variety give good respon to all of treatments.

