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Various Drying Technique Affected Papaya Seeds Qualities

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Abstract

Papaya seeds production always face with a low germination due to post-harvest technique. Moreover, there has not exactly suitable method for seed drying. The drying of seed can have major effects on seed quality. This experiment was determined the proper drying technique in order to get better papayas seed quality. Papaya seed was brought from Samngao District Plantation, Tak province, Thailand. Three drying methods were sun drying, 40°C hot air oven and using silica gel as the moisture absorbent. Initial seed moisture were investigated and recorded. Seed samples were dried until it reached the moisture content of 20, 15, 10 and 5 percent. Standard germination tests, Vigour test by accelerated aging technique, Viability test by Tetrazolium test were used. It was found that drying with silica gel result 57 % germination, 92 % in viability test and 38 % in vigour test. Hot air oven drying provided 47 % in germination, 90 % in viability test and 29 % in vigour test. The result of two previous methods can maintain the papaya seed viability but can not sprout may be due to seed chemical inhibitant. While the sun drying resulted the poorest quality of the seed which were 30 % in germination 85 % in viability and 19 % in seed vigorous. The use of sun drying system has provide high temperature which generally make them unsuitable for small scale drying harvested seed crops. Dehumidifiers using solid desiccants as silica gel can reduce the relative humidity below 40 % and then the seed moisture removed. Therefore, drying with seed moisture absorbent was the best result and sun drying was the poorest method.

Keywords: Accelerated ageing technique, seed vigour, Tetrazolium test