Using Computerized Analysis of Seedlings to Evaluate the Physiological Potential During Production Process of Peanut Seeds

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Introduction

Peanut seeds are considered difficult to produce because they present often unsatisfactory levels of germination and vigor due to factors related to harvest, transport, storage and processing that in addition to causing reduction in the physiological may favor the entry of pathogens.

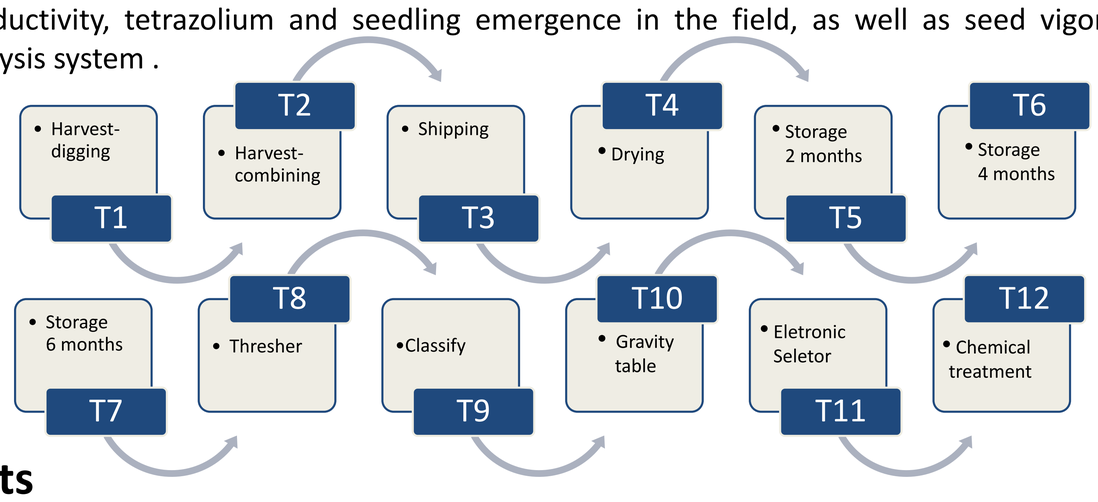
To assess the physiological seed, beyond the methods routinely used in computerized analysis of seedlings it is fast, accurate and without subjectivity can assist in monitoring the quality of peanut seeds along the production process.

Objectives

Therefore the objective of this study was to evaluate the different process stages harvesting, drying and processing on the physiological, through computerized analysis of seedlings.

Metodology

Seed samples were collected in the steps described below. After each step were subjected to determination of the water content and the physiological potential for germination, first count, Speed Index Emergency, accelerated aging, electrical conductivity, tetrazolium and seedling emergence in the field, as well as seed vigor analysis system .



Results

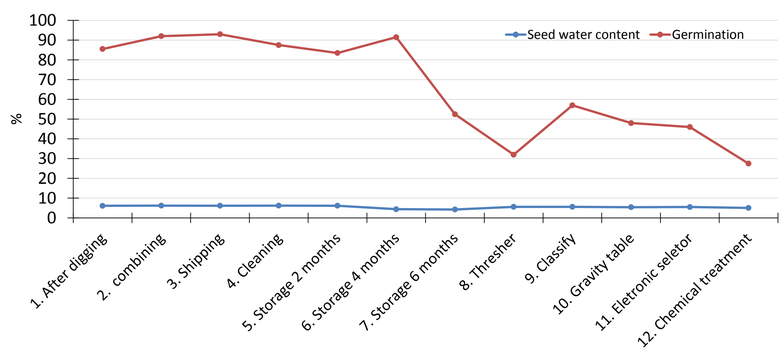


Figure 1. Water content and germination of peanut seeds cv. IAC Runner 886, 2011/12 season, according to different steps of harvesting, storage and processing.

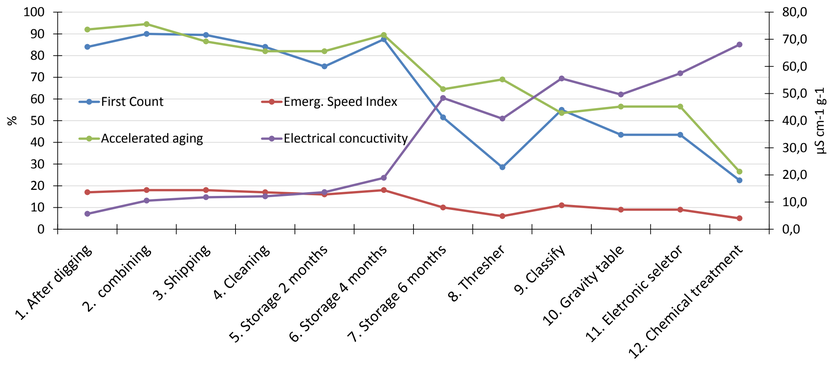


Figure 2. First count germination, emergence speed index, accelerated aging and electrical conductivity of peanut seeds cv. IAC Runner 886, 2011/12 season, according to the different steps of harvesting, storage and processing.

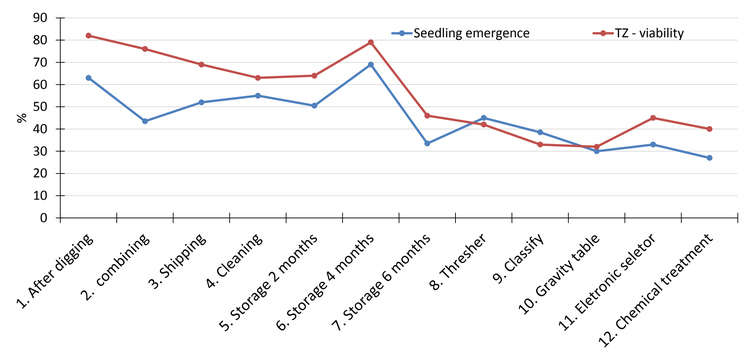


Figure 3. Seedling emergence and viability by the tetrazolium test of peanut seeds, cv. IAC Runner 886, 2011/12 season, according to the steps of harvesting, storage and processing.

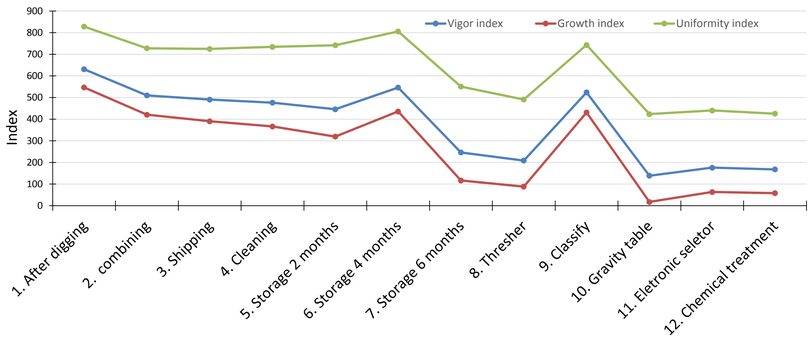


Figure 4. vigor index and seedling growth and uniformity by SVIS softwere peanut seeds, cv. IAC Runner 886, 2011/12 season, according to the steps of harvesting, storage and processing.

Figure 5. Peanut seed harvest: digging.

Figure 6. Peanut seed harvest: combining.

Figure 7. After shipping.

Figure 8. Drying of peanuts seeds.

Figure 9. Peanut seeds storage.

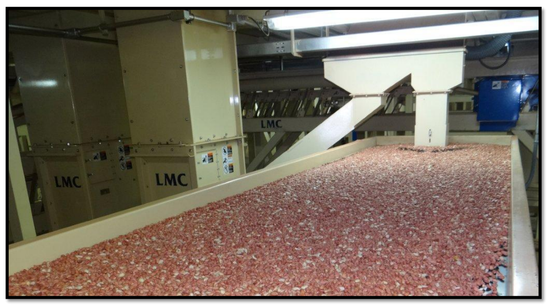


Figure 10. Peanut seeds processing.

Figure 11. Eletronic seletor.

Conclusion

The computerized analysis seedling exhibits high efficiency in identifying differences between the process steps for the production of peanut seeds

Acknowledgements

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