From Low Technology to Biotechnology: Practical Solutions to Indigenous Communities’ Postharvest Needs

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Abstract

Postharvest practices are vital to ensure optimum preservation of crop quality after harvest until it reaches consumers. They can range from simple, low technology to complex advanced methods; both techniques seek to maximise farming outputs for high returns. The indigenous communities in Malaysia are heavily reliant on self-sustenance through cultural farming practices and thus the incorporation of good postharvest practices would be beneficial to their livelihood. Amongst the many agricultural choices, bananas are a major food crop that is planted by most indigenous communities. Unfortunately, the handling and processing of bananas by the indigenous communities do not meet basic requirement for shelf life extension thus resulting in high losses. At present, various technologies have been developed to help extend shelf life of bananas which are often employed by commercial banana farms or mainstream planters. After comprehensive reviews, investigations and surveys, some of these technologies were found to be viable but not affordable or practical for the use of indigenous communities. This paper presents data for some low technologies developed for these communities which are innovations adapted from current working postharvest practices.

INTRODUCTION

In the agriculture sector, postharvest losses range from 10-40%, as a direct result of poor handling. Postharvest handling vary between farmers as some do not receive important harvesting assistance such as cleaning equipment and packaging, storage and cooling facilities (Kader, 2005). Main reasons for losses are due to inadequate handling of fruits such as inappropriate packaging material and storage. Generally, the currently available postharvest strategies include waxing, evaporative cool storage, cold storage, modified atmosphere packaging (MAP), controlled atmosphere (CA) storage, cold chain, irradiation, edible coatings and usage of chemicals to inhibit ripening hormones, each has its own importance, challenges and benefits. Some technologies are beneficial for academic purposes and/or for large plantations or multinational corporations that can afford the cost. There exists a section within our community which is in need of our attention to offer solutions to their agriculture struggles and constantly hopes that someday, technologies available can finally reach them and consequently improve their quality of life. They are the indigenous community actively involved in agriculture and probably highly dependent on this sector for survival. According to International Fund for Agricultural Development (IFAD) nearly 350-370 million indigenous people live across 70 countries which make up about 5% of the individual global total population. The indigenous community is one of the most diverse in the world with about 5000 groups and nearly 4000 languages. The community relies on traditional activities such as

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