News and Reviews

ACCEPTANCE OF DIFFUSED LIGHT STORAGE TECHNOLOGY BY POTATO FARMERS IN THE BENGUET AND MOUNTAIN PROVINCES OF THE PHILIPPINES

Richarte F. Acasio¹, Amado de los Santos², and Peter Vander Zaag¹

Abstract

Improper seed potato storage was considered to be a major constraint in the Philippine highlands. For this reason a program of introducing diffused light storage technology was launched in early 1978 to resolve the problem. Scattered reports indicated a rapid adoption of the technology by the farmers; however no follow-up had been done to determine the extent of adoption. Hence, a survey was conducted from July to December 1983 to assess the impact of the diffuse light storage (DLS) technology among potato farmers.

Of the 1412 farmers interviewed 42% have adopted the DLS technology. Nearly all adopters have simply modified existing structures to permit diffuse light to enter and store tubers in thin layers. Only 1.5% have constructed simple storages. Generally the farmers who accepted the technology are close to the main access road and are the more progressive farmers. Most reported better quality seed and subsequent higher yields as a result of the technology. Conversely, 35% of the respondents, primarily in remote areas, were not even aware of the DLS technology. Another 27% of the respondents planned to accept the technology by improving their traditional storages.

To increase the utilization of the technology, more extension effort needs to be put forth demonstrating the benefits of the DLS by improving existing storage structures found in remote areas where potato production is not well developed.

Introduction

The major potato production areas in the Philippines are concentrated in the highlands, particularly Benguet and Mountain Province. These areas have good growing conditions for potato production. There are two main cropping seasons: the wet season crop from March to July, and the dry season from October to February (3).

The short period between seasons (dormancy problem) and the use of different cultivars for each require farmers to plant seed pieces stored for approximately 6 to 8 months.

¹The International Potato Center, Region VII, Box 933 Manila, Philippines.
²Ministry of Agriculture, Province of Benguet, Philippines.
Farmers store seed tubers in any available place within their farm buildings. Most often, seed is stored in dark areas of a farm building with other farm supplies or implements and with inadequate light and ventilation. As a result the seed is shrivelled and has long etiolated sprouts after eight months.

Diffused light storage technology has proven to be advantageous in reducing storage losses and results in better quality seed due to reduced weight losses, more sprouts per tuber which are short and robust. This improved emergence, increased stem number per hill, increased yields and gave higher economic returns (4). The possibility of keeping seeds in diffused light storages for up to eight months also eliminated the need of refrigerated storages.

Diffused light storage was jointly introduced by the Philippine Potato Program (PPP) and the International Potato Center (CIP) to Benguet in 1978. Several demonstration facilities of diffuse light storages were constructed at strategic locations along the Mt. Trail, Benguet (1, 2, 5). The demonstration and the campaign to stress the benefits derived from this technology had a positive response from farmers in Benguet. Some built "simple" DLS's (a building designed to store seed potatoes only), while others adapted the DLS technology, modifying their existing facilities by replacing galvanized iron sheets on their sides with transparent corrugated plastic sheets or glass permitting diffuse light to enter. These types of storages we have defined as "improved storages."

The degree of adoption of either of these two approaches was not known. In 1979, there were 43 known farmers in Benguet and Mountain Province who adopted the technology (4). Since then a rapid increase in the number of adopters of the technology has taken place; however no precise data are available. Why have many farmers adopted or not adopted the technology was another motive for this study.

The objectives of this study were: 1) to quantify the extent of diffused light storage adoption by interviewing a large percentage of the potato farmers; 2) attempt to evaluate why the technology was accepted or not; 3) obtain information that would assist us in developing a program to improve the technology and enhance its transfer.

Methodology

A survey was conducted on the extent of DLS technology adoption in all potato growing municipalities of Benguet and Mountain Province. Municipal extension agents of the Ministry of Agriculture in the two provinces were convened and oriented as to the objectives of the survey and the questionnaire was explained on July 18, 1983 in La Trinidad, Benguet. We did joint questionnaires with the extension agents in each municipality.