



E-ISSN: 2278-4136
P-ISSN: 2349-8234
www.phytojournal.com
JPP 2020; 9(2): 175-176
Received: 01-01-2020
Accepted: 03-02-2020

MS Singh
College of Agriculture,
Iroisemba, Central Agricultural
University, Imphal, Manipur,
India

Kshetrimayum Manishwari Devi
College of Agriculture,
Iroisemba, Central Agricultural
University, Imphal, Manipur,
India

Tabuiliu Abonmai
College of Agriculture,
Iroisemba, Central Agricultural
University, Imphal, Manipur,
India

Lantana camara – boon for farmers for save storage of pea seeds under Manipur condition

MS Singh, Kshetrimayum Manishwari Devi and Tabuiliu Abonmai

DOI: <https://doi.org/10.22271/phyto.2020.v9.i2d.10852>

Abstract

Lantana camara, also known as Spanish Flag or West Indian Lantana, in Manipur: Samballei or Nongballei, is found abundantly in Manipur. An experiment was conducted in the experimental laboratory of Agronomy Department, College of Agriculture, Iroisemba, Central Agricultural University, Imphal in 2017-2019, to study the “Effect of *Lantana camara* on controlling insect pests on storage of pea seeds (*Pisum sativum* var Makhyatmubi) in Manipur condition”. It was found that when we mixed the *L. camara* with pea seeds in the ratio 1Kg pea seeds:150g *L. camara* and above, there were no damage of the pea seeds by insect pests but in control where there was no *L. camara*, all the seeds were damaged by insect pests.

Keywords: Pea seeds, *lantana camara*, storage

Introduction

Lantana camara, also known as Spanish Flag or West Indian Lantana, in Manipur: Samballei or Nongballei, is a species of flowering plant in the verbena family, verbenaceae, native to the American tropics. Among the category of medicinal plant, *Lantana camara* is one, but in India this plant is categorised in poisonous plant as this plant is among top ten invasive weeds and toxic plant on the earth (Lonare *et al.*, 2018) ^[1]. According to credible scientific studies that were conducted in India, the leaves of the *Lantana camara* plant contain potent insecticidal properties that can be used to repel and even kill harmful insects (www.herbs-for-health.com/lantana-camara, 2017).

In India about 70% of farm produce is stored by farmers for their own consumption using different types of storage structures made from locally available materials (Shukla and Patil, 1988). Farmers have been evolving number of traditional practices to avoid huge losses that are occurring in stored pulse grains due to insect pests infestation (Pushamma and Rao, 1980) ^[2]. In Manipur, majority of the pea growers are small and marginal. So, they are unable to store their produce seeds and forced to sell their seeds at a lower price. Many of the seeds kept for sowing for the next season are also infested and hence, cannot be used for sowing thereafter. Local cultivars of pea e.g. Makhyatmubi, Ningtekpi, Makuchabi, etc, their seeds cost Rs. 350-400/Kg. So, many of the farmers cannot effort it. The insect pests directly feed on the stored grains, if we do not use any synthetic or organic pesticides. Now-a-days, with the popularization of organic farming in the state of Manipur, the farmers are willing to explore and adopt more organic solutions in their fields which is easy and good for health as well as environment.

Considering the above problem of storage an experiment was conducted at Department of Agronomy, College of Agriculture, Iroisemba, Central Agricultural University, Imphal from the year 2017 to 2019 to bring about a suitable storage method to minimize the storage losses in pea with the help of *Lantana camara* which is available everywhere in Manipur.

Methodology

Pea seeds were collected from the farmer’s field and cleaned properly. The seeds were spread thinly on a concrete floor under the sun for 5 days. It was then cooled and stored in polythene bags. *Lantana camara* leaves were collected from the forest and dried in the shade. After drying, they were chopped into small pieces. The pea seeds were then mixed well with the *Lantana camara* at different proportions as: T₁(1Kg pea seeds, control without *Lantana camara*), T₂(1Kg pea seeds+150g *Lantana camara*), T₃(1Kg pea seeds+200g *Lantana camara*), T₄(1Kg pea seeds+250g *Lantana camara*), T₅(1Kg pea seeds+300g *Lantana camara*), T₆(1Kg pea seeds + 350g *Lantana camara*) and T₇(1Kg pea seeds + 400g *Lantana*

Corresponding Author:
Kshetrimayum Manishwari Devi
College of Agriculture,
Iroisemba, Central Agricultural
University, Imphal, Manipur,
India

camara) and then stored in polythene bags with the ends of bags tied. Each treatment consists of four replications.

The upper most layer of each treatments was covered with a layer of *Lantana camara*, and were placed on a desk in the laboratory for a year. The stored seeds were monitored and damage percentage were recorded for each consecutive year i.e., from 2017 to 2019.

Results and Discussion

It was observed that there was no damage of pea seeds by insect pests in all the treatments except the control (Table no. 1). It may be due to the leaves of *Lantana camara*, which contain potent insecticidal properties as a result repels insect pests. (Lonare *et al.*, 2018) [1] stated that *L. camara* is a toxic plant. In the same view it was reported that *L. camara* plant contain potent insecticidal properties that can be used to repel and even kill harmful insects (www.herbs-for-health.com/lantana-camara, 2017). Similar result was also obtained by (Sah *et al.*, 2004) that while storing field pea in gunny bags, onions were mixed randomly @ one kilogram per quintal of field pea for preventing damage by storage pest. Farmers perceived that the smell of onions repel the storage pest, thus minimizes the storage losses. In the same way prior to storage of chickpea seeds, *Asafoetida* was found mixed with water and sprinkled and mixed thoroughly on the grains by farmers. The practice was followed with a rationale that the smell of *Asafoetida* repels the storage pest and the damage by storage pest is minimized. In the control treatment, where there was no *Lantana camara*, the seeds were all damaged.

Table 1: Effect of *Lantana camara* on 1 year storage of pea (2017-2019)

Treatments	Damaged percentage (%)		
	2017	2018	2019
T1:1Kg pea seeds (without <i>Lantana camara</i>)	100	100	100
T2:1Kg pea seeds+150g <i>Lantana camara</i>	0	0	0
T3:1Kg pea seeds+200g <i>Lantana camara</i>	0	0	0
T4:1Kg pea seeds+250g <i>Lantana camara</i>	0	0	0
T5:1Kg pea seeds+300g <i>Lantana camara</i>	0	0	0
T6:1Kg pea seeds+350g <i>Lantana camara</i>	0	0	0
T7:1Kg pea seeds+400g <i>Lantana camara</i>	0	0	0

Conclusion

Pea seeds could be stored with *Lantana camara* in order to safe from the insect pests damage. It would support the economy of small and marginal farmers and would be good for environment and human health too.

References

1. Lonare MK, Sharma M, Hajare SW, Borekar VI. *Lantana camera*: Overview on toxic to potent medicinal properties. International Journal of Pharmaceutical Science and Research, 2018.
2. Pushpamma P, Rao KC. Pigeon pea production, processing and utilization in Andhra Pradesh, In: Proceedings of the International workshop on pigeon pea, (ICRISAT, Patancheru, Andhra Pradesh), 1980; 2:435-441.
3. Sah U, Dubey SK, Saxena H. Indigenous pulse storage methods in Bundelkhand region of Uttar Pradesh: An exploratory study. Current Advances in Agricultural Science. 2014; 6(2):161-164.
4. Shukla BD, Patil RT. Overview of grain drying and storage problems in India, In: Research and development issues in grain post-harvest problems in Asia, 1988.

5. Singh MS, Devi Th Anupama. Effect of rice husk ash on controlling insect pests on storage of soybean seeds under Manipur condition. 2020; 8(1):1866-1868.
6. www.herbs-for-health.com/lantana-camera/