INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact factor: 4.295
(Volume3, Issue4)
Available online at www.ijariit.com

A General Study on By-Products of Sericulture

Ameet Singh
PG Department of Sericulture, Poonch Campus
University of Jammu
sudan8980@gmail.com

Abstract: Sericulture is an agro based industry which involves the raising of food plant for silkworm, rearing of silkworm for the production of cocoons, reeling and spinning of cocoon for production of yarn etc. for value added benefits such as processing and weaving.
Sericulture is a part time family occupation mainly for the below poverty line poor people. Silk is an animal protein secreted by the fifth Instar larvae for spinning the cocoon. This cocoon acts as a protective covering of delicate caterpillar to pass the pupal stage inside it and metamorphosis into an adult moth.

Keywords: Cocoons, Pupa, Reeling, Instar.

INTRODUCTION

By-Products of Sericulture it involves 3 different Activities
1. MARICULTURE- the cultivation of mulberry.
2. REARING OF THE SILKWORM.
3. REELING OF COCOONS TO PRODUCE RAW SILK.

In each of these activities. A number of by-products, popularly k/as waste are generated& these bi-products can be put to good use.

Classification of by-products:
According to their generation, the by- products are classified as follows:

A. By-products of moriculture
Excess of pruned leaves can be used as cattle feed, manure or mulches for the mulberry garden are as fuel.
Excess of pruned branches can be used as a fuel and rejected plants can be used as raw material for paper pulp ind.

B. By-products of silkworm rearing
Silkworm litter. Pierced cocoons. Cut cocoons. -Floss. Double cocoons, Black or melted-flimsy, stained & urinated cocoons.

USES OF BI-PRODUCTS OF SILKWORM REARING

The following uses have been found are:
Use as compost: Left over mulberry leaves & silkworm litter can be used as compost in order to increase the fertility & prod. Of soil. Moreover, it enhances the water holding capacity of the soil. Destroy harmful pathogen.
2. Use as animal feed: Reject, dead & cast larval skin is good for poultry feed.
3. Use as suturing material: silk gland from dead worms used as surgical suturing.
4. Use as feed for biogas plant: Silkworm litter along with cow dung can be used as raw material in the B.gas plant.
5. Used in the pharmaceutical industry: Pharmaceutical & perfumery compounds are produced from silkworm litter in China. - Used as the duo, healing agent & as medicine for stopping the bleeding of gums.
Pierced cocoons as a bi-product & their use in silk industry: Pierced cocoons can be used for producing fabrics like bed sheets, chadder, lady scarves, curtains, table-cloth & caps**.**

C. Bi-product of reeling & further processing of silk:

1. Cooking wastes; wastes generated during the cooking process.
2. Reeling wastes; waste generated during reeling process.
3. Half reeled cocoon and unreliable cocoons.
4. Charkha waste; generated in charkha system of reeling
5. Re-reeling waste; non-twisted silk waste generated during the re-reeling process.
6. Spun silk is a pure silk obt.by spinning the diff. type of reeling waste and irrepealable cocoon.Spun silk is obtained. By 2 – methods:

1. SPINNING BY HAND

2. SPINNING BY MACHINE

Silk noils are yielded in the course of silk spinning.

BY-PRODUCTS UTILIZATION AND ECONOMIC IMPORTANCE OF MULBERRY SILKWORM PUPAE

1) AS compost-Pupae is by product of silkworm rearing. When pupae in the cocoon get died, we can use this pupa as compost.
2) AS human food-In some parts of India and China the silkworm pupae are regarded as delicious food because it contains following constituents:
A) Water b) Fat c) Protein d) Glycogen etc.
3) Pupae as animal food-Defatted pupae are commonly used as cattle feed.
4) As pupal oil-Dried pupae consist of 28.4% oil and 51.3% protein are used for the manufacture of pupal oil. It is used for burning lamps as well as for prep. Homemade soaps. Used in jute industry to soften the jute fibers.
5) Defatted protein-Defatted proteins are used for making artificial fibers.
6. It also used as animal feed, manufacture of amino acids by chemical or microbiological methods

Bi-product utilization & economic importance of mulberry silkworm moth

1. Male silkworm moth is used in the preparation of Wine.
2. The liq. Extract from the moth can be used to treat impotence, abnormal menstruation & menopausal symptoms.
3. They are used to prepare pharmaceutical product for curing trauma & to strengthen the masculine function.
4. As compost material.
5. Silkworm moth oil to obtain textile dyes & soaps.
6. As an animal feed.

REFERENCES

1. Silk Worm Rearing, Volume-2-15/2, FAQ of United Nations, Rome, 1987.
2. Appropriate Sericulture Techniques, Manjeet S.Jolly, CSRTI, Mysore, 1987
3. .Hand Book of practical sericulture, Ullal & Narsimhanna, CSB, Bangalore, 1981.
4. Hand Book of Silkworm Rearing, Tazima, Agriculture Techni-
5. cal Manual-1, Fuji Publishing Co. Ltd., Japan, 1992
6. A text Book of Sericulture by Ganga.
7. Techniques of Silkworm Rearing in the Tropic, ESCAP, United Nations, New York, 1993.
8. Raja Ram (1997). Sericigenous Fauna and Flora of Himachal Pradesh. Indian Silk (June) 5-6.
9. Rajinder Kaul Mir MR, Khan MA and Sardat Nazir (2006). Intercropping of Mulberry with Saffron.
10. Indian Silk (June) 5-6.
11. Ramamurthy V and Jagdish Prasad (2006). Intercropping with mulberry in shallow soils. Indian Silk
12. (June) 5-6.
13. Singh KK, Pande AB and Tiwari DK (2006). Study on Prospects of promoting of multiple Silkworm.
14. From the Internet also.

