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An explorative survey on Sisnu: A wonder but highly underutilized crop of Nepal

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Abstract

Sisnu (*Urtica sp.*) is a wild, unique, herbaceous, perennial flowering plant which has a long history of use as a source of medicine, food and fiber especially in Nepal. In Nepal, 1 in 4 people lives below poverty line since rice is only considered as the food by Nepalese but rice can't be cultivated in every situation so one of the solution to the problem of food scarcity may be security of underutilized crop of respective place (indigenous food) and awareness about their importance, consumption and cultivation. Chepang, one of the Himalayan tribe of Nepal are the main consumers of the sisnu as the food (khole). A case study was conducted to analyze the distribution, importance and extent of consumption of sisnu in Nepalese society. For better comparison, places of different climatic condition were selected i.e. purba chitwan (inner terai) and uperdangadi (hilly region) where the direct field observation and interaction with consumers was carried out for about 4 months. It is the best treatment for diabetes and the powder extracted from the root of sisnu is known to be found almost in every aryurvedic medicine. It also has the functions like antioxidant, antidote of rashes and abortifacients. According to WHO, in world there are about 415 million diabetic patient which can be treated by sisnu if the cultivation of sisnu is promoted. Thus, securing only the major crops like rice, wheat and maize won't be enough to describe the broad term food security but also securing the indigenous underexploited food (like sisnu of Nepal) at their origin perfectly defines "food security".

Keywords: Sisnu, underutilized crop, Nepal

Introduction

Sisnu or *Urtica dioica* also called stinging nettle is native to Europe, Asia, Northern Africa and Western North America. There are 6 sub-species of this species, 5 of which have many hollow stinging hairs, called trichomes on the leaves and stems, which act like hypodermic needles and this needle like structures contains chemicals like histamine that produces stinging sensation when contacted by humans and other animals. In Nepal, sisnu is found in wild form in the forest of high hill and himayalas. The nepali name of edible stinging nettle are: Sisnu, Sishnu, Lekali sishnu (lekali=high hills), Thulo sishnu, Ghario sishnu, Bhangre sishnu, Patle sishnu.

The plant is popular in areas where there is scarcity of vegetables. The young tender leaves and shoots are picked up and cooked like other any leafy vegetables. Sishnu ko saag is one of the most popular form of this stinging nettle, the nettle is prized for its taste, nutrient value (iron, vitamin A and C) and healing properties.

Methodology

The methodology adopted for the case study were: direct field visit, unstructured questionnaire (open end), articles related to sisnu and literature review. For questionnaire, random sampling was conducted at early stage of the case study to avoid the biasness and the data collected were analysed along with the participation of the villagers themselves. During direct field visit, two way relation was established; give and take i.e. villagers taught the procedure to make slurry from leaves of sisnu and extraction of powder from the root of sisnu and we made them know about food security and importance of security of sisnu from various prospective to maintain security of indigenous underutilized crop.

Results and Discussions

For the data collection we adapted both the primary and secondary method. Primary here refers to direct field observation and direct interaction with farmers and secondary refers to consulting books and articles related to Sisnu. From the case study following data were observed:

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World population= 7.6 billion (2017)

Hunger rate= 780 million

Nepal population= about 29 million

Hunger rate= 25% of total Nepal population

Sisnu in Nepal =6.3 %

Cereal production= 2.62 billion MT

From these data we observed that, only the production of cereals is not enough to overcome the hunger. The nutrient content of sisnu are:

Carbohydrate=7%

Protein=5.5%

Fat=0.7-3.3%

Although the sisnu can't replace the cereals completely but can help in reducing hunger to some extent and provide medicinal support in today's competitive world. It was reported that *U. dioica* L. (Urticaceae) leaves have been used in Libya in the form of a medicinal tea or decoction as diuretic and antidiabetic therapies and to treat stomach disorders. It was reported that Nettle leaf is one of the most commonly used herbs by midwives who commonly recommend it to help build iron levels. Herbalists have traditionally prescribed the juice of the nettle as an antidote to rash and the tea of the sisnu leaves has an antioxidant property. It was reported in Nepal, sisnu is used in IPM (Integrated Pest Management) to ward off pests such as the cabbage butterfly larvae, hairy caterpillars, cutworms, red ants, termites and aphids. It was reported that from small scale industries of a small hamlet in Nepal, around 13 quintals of nettle powder was produced in a single year. A 1975 review article by Farnsworth *et al.* reported that stinging nettle was a potential abortifacient, and that its constituent 5-hydroxytryptamine was a uterine stimulant; however, frequent use of large doses of this herbal infusion in midwifery practice has demonstrated no evidence of such activity.

Conclusion

From the analysis of all these data, following facts were concluded, Sisnu has many healthy benefits than other crops like cereals. Despite many health benefits, sisnu is not being domesticated but only found in wild forms in forest areas. Day to day hunger and mouth to be fed are increasing, whose requirements can't be fulfilled unless the underutilized crops are also prioritized along with the major crops. As the population is increasing, competition is also increasing causing more work load and carelessness towards the daily diet resulting in many health problems where consuming sisnu can be the natural solution. Not only the floral parts but also the root of sisnu can be consumed in many forms which concluded the whole plant of sisnu is of high value. Thus, food security in broad term must be security of underutilized crop along with major food crops.

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