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BHUTAN STANDARD
Production Process of Local Nettle Yarn



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Director General
Bhutan Standards Bureau
Rijug Lam
Thimphu-11001
Tel: 00975-2-325104/325401
Fax: 00975-2-323712/328298
Web: www.bsb.gov.bt
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FOREWORD

This Bhutan Standard for Production Process of Local nettle Yarn was drafted by Textile and Handicraft Working Group on nettle and adopted by Bhutan Standards Bureau after the draft finalized by the Textile and Handicraft Technical Committee TC 06 and approved by the Bhutan Standards Bureau Board (BSB Board) in xxx 2022 .

This standard is subject to systematic review after five years to keep pace with the market trends, industrial and technological developments. Any suggestions and further information may be directed to the concerned Technical Committee.

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Production Process of Local Nettle Yarn

1 Introduction

The Himalayan nettle is the longest fibres currently known to humankind and is considered finer, stronger and more elastic than linen. The type of nettle fibre found in the forests in Bhutan and harvested for fibre is called *Girardinia Diversifolia*, locally called *Zocha* in Dzongkha (dz), *Zangru Jazu* in sharshop (sh), and *Ba-kuyi* in Tongsapkha (tg).

Use of nettle fibres along with other bast fibres was once widespread, because bast-fibre cloth was the chief material for clothing until people learned to work with other fibres or, later, were able to obtain machine spun Indian cotton yarns. Apart from clothing, nettle fabrics were also used to make a variety of utilitarian textiles such as bags, sacks, and carrying cloth (*Bundri*).

2 Scope

This guideline specifies the processing of locally harvested nettle fibres into yarns in Bhutan.

3 Normative References

No normative references are cited.

4 Terms and Definition

For the purpose of this standard, the following definitions shall apply.

- 4.1. **Ba-Kuyi(tg)**: Term referred to nettle
- 4.2. **Zangru Jazu(sh)**: Term referred to nettle
- 4.3. **Zocha(dz)**: Term referred to nettle
- 4.4. **Patang(dz/sh)**: Knife(heavy duty) used for harvesting of nettle fibres
- 4.5. **Zen-Cha(dz)**: Wooden hammer for stirring and beating the fibres.
- 4.6. **Je-Nang(sh)**: Traditional tool for making hank
- 4.7. **Gin-Dhang(tg)**: Traditional tool for making hank
- 4.8. **Pot**: Cast Iron pot for cooking
- 4.9. **Gothey(dz)**: Fine wood ash after sieving
- 4.10. **Yok-Pa(dz)**: Drop spindle used for yarn spinning
- 4.11. **Bundri(dz)**: Carrying cloth
- 4.12. **Nakapani (dz)**: Term referred to soapnut
- 4.13. **Nettle (*Girardinia Diversifolia*)**: Commonly known as the himalayan nettle or giant nettle, *Girardinia Diversifolia* is found abundantly in open forest land and moist habitats. It grows at an altitude of 1200-3000 m and is harvested to make fibres.

5 Processes

5.1 Harvesting

- a) Cut the stem
- b) Remove the leaves and outer bark that carries hair like thorns
- c) Split the stalk and peel the outer layer. This removes the inner woody layer.
- d) Collect the outer layer and make it into bundles.

5.2 Cooking

While the nettle fibres are usually cooked to remove the outer skin, some communities usually by-pass this stage altogether and choose to use nettle fibres straight from green. The fibres can be cooked immediately or dried for future use although the process of cooking is easier when the fibre is fresh.

- a) In a pot, add fibres with enough water to immerse the fibres and wood ash (gothey). Cook the fibres until the skin becomes soft and can be seen separating from the inner layer. The process is the same for both fresh and dried fibres.

Note :) 1). The cooking of fibres is recommended as it produces finer quality yarns.

2). The blend ratio of fibres and wood ash is 1:1 (1 kg yarn : 1 kg wood ash)

3). Hard wood ash is preferred for cooking as the cooking process is faster using hardwood ash.

5.3 Washing

- a) Gently beat the fibres to remove the outer skin using a Zencha.
- b) Rinse in water and repeat the process until the outer layer is completely removed.

5.4 Drying and smoothening

- a) Dry the fibres in the sun.
- b) Once dried, soak it for a minimum of 1 hours in hot whey (strained) or hot water with a small amount of mustard oil. The hot water should just be enough for the fibres to be immersed. For 1 kilogram of fibres 50 ml of mustard oil is required. The smoothening process is initiated to make the fibres soft and prevent it from sticking. If the quantity of mustard oil exceeds, separating the fibre becomes difficult as the fibres stick to each other.
- c) Dry the fibres in the sun. It can be hung and dried straight from the solution.

5.5 Carding

Open up the dried fibres carefully with hand (carding).

5.6 Making Sliver

Sliver is made while spinning it into yarns.

5.7 Spinning

Sliver is spun using the Yok-pa (dz). The spun yarns are single ply.

5.8 Making hank

Spun yarns are made into hanks using Gin-dhang(tg).

5.9 Washing Yarn

Yarns are washed thoroughly to remove oil, dirt and other impurities using mild soap or Nakapani (dz).

5.10 Dyeing

Dye materials such as indigo, madder and symplocos are used. The traditional colors obtained from the above are blue, green and reddish orange. Contemporary dye ingredients used are pomegranate, and onion that produces brown and pinkish hues.

Note: In case dyeing is not required, yarns can be directly starched.

5.11 Starching

- a) Make a starch solution using water and mixed wheat & corn flour. When it comes to a boil, immerse the hanks and bring it to boil again.
- b) Wring it to squeeze out the water, and stretch it to even out the yarn.
- c) Dry the yarns in the sun.

5.12 Unwinding:

The yarns are rolled into yarn balls for weaving.

5.13 Weaving:

The fibres are used to weave textiles on backstrap looms.

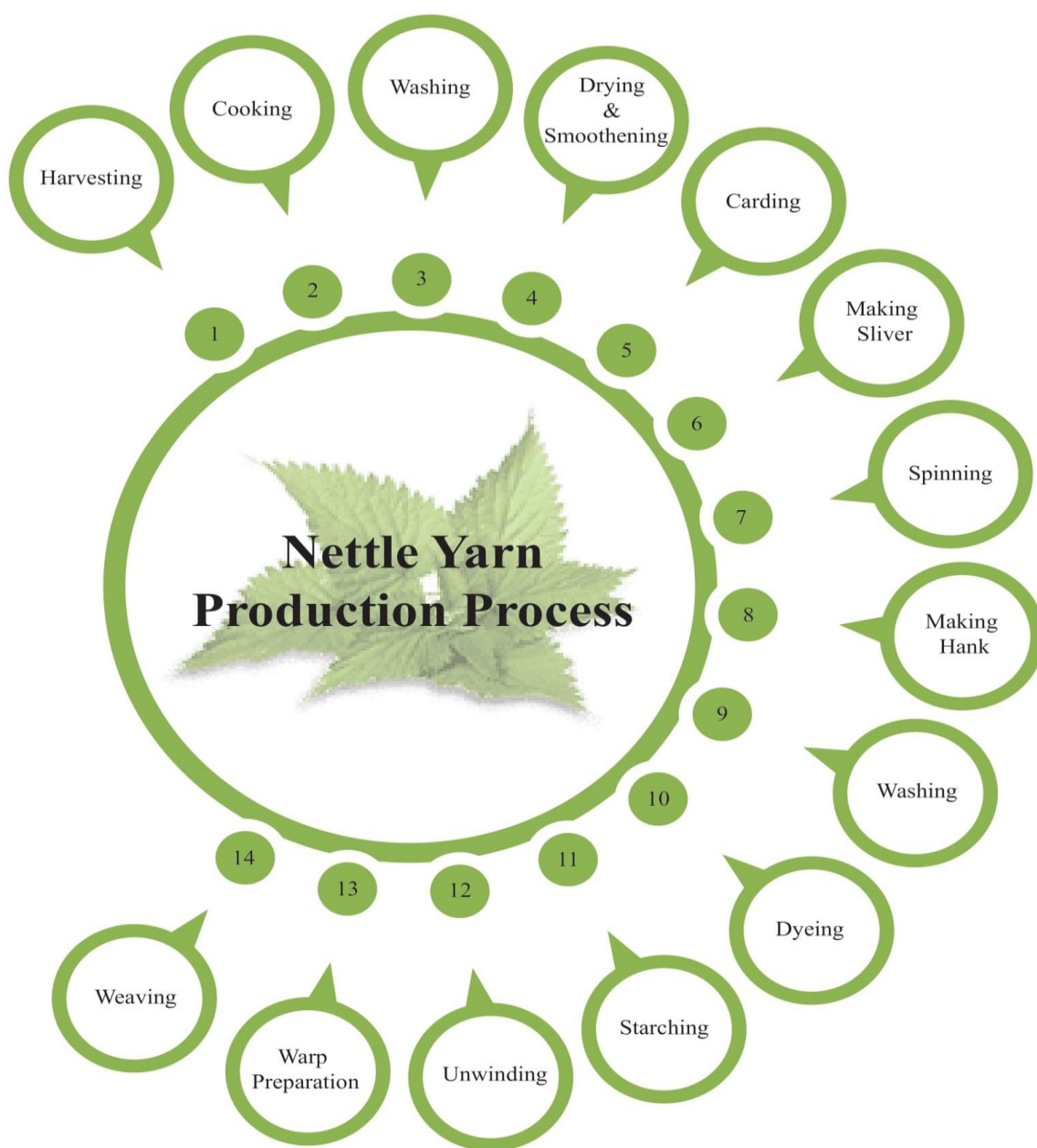
6 Grading

- 6.1 Harvesting straight plants that do not have many leaves branching out gives continuous and strong fibres. Plants with a lot of leaves produce fibres with knots, which makes the weaving process difficult.
- 6.2 Well spun yarns are of better quality.

7 Tools and Equipment

- 7.1 **Patang:** For Harvesting(cutting) of nettle fibres.
- 7.2 **Hand gloves:** For protection against thorn and smoothening of stem
- 7.3 **Ropes:** For carrying fibres bundles.
- 7.4 **Pots:** For cooking nettle fibres with ash. Iron cast pot is preferred.
- 7.5 **Zen-Cha:** For stirring and beating the fibres
- 7.6 **Yok-Pa:** For spinning yarns from sliver
- 7.7 **Je-Nang/Gin-Dhang:** For making hank

8 Flowchart



(Informative)

1. Nettle harvesting is carried out in the months of October and November when it is just right and has matured.. When it is immature, the fibre strength is compromised. December proves cold for harvesting as it starts snowing. People stop harvesting when frost starts forming because the cold makes it difficult for separating the outer skin from the inner layer.
2. Trongsa Dzongkhag (Bayling village in Langthil gewog), Mongar Dzongkhag (Daag, Yarig, Saipong villages in Silambi gewog and Drogsar village in Saling gewog), Trashigang (Drubkhang goenpa in Lumang gewog, Jeri and Lemi in Khaling gewog), Samdrup Jongkhar Dzongkhag (Lauri gewog), Punakha Dzongkhag (Bali village in Chhubu gewog and Tongsana village in Guma gewog), Wangdue Phodrang Dzongkhag (Uma village in Darkar gewog) and Lhuntse Dzongkhag (Ney village in Gangzur gewog) harvest nettle plants to weave nettle textiles.

TEXTILE AND HANDICRAFT TECHNICAL COMMITTEE (TC 06)
WORKING GROUP (WG-01)

Organization

Representative(s)

Textile and Handicraft Expert

Ms. Karma Choden (Convener)

Royal Textile Academy (RTA)

Ms. Pema Chhoden Wangchuk

Bhutan Cotton Project

Mr.Pema Gyalpo

Thongsa Cotton Cluster Development

Ms. Namkha Wangmo

Ms.Tshering Pelden

Member Secretary

Mr. Tek Bdr.Chhetri
Standardization Division
Bhutan Standards Bureau

TEXTILE AND HANDICRAFT TECHNICAL COMMITTEE (TC 06)

Organization

Representative(s)

Norbooz Buray and Textile

Mr.Norbu Wangdi(Chairperson)

Bhutan Association of Women Entrepreneur (BAOWE)

Ms. Yangchen Lhamo

Department of Culture, MoHCA

Ms. Tshering Uden Penjor/
Ms.Tshewang Zangmo

Handicraft Association of Bhutan (HAB)

Mr. Chorten Dorji

Royal Textile Academy

Ms. Pema C. Wangchuk

SABAH Bhutan

Ms.Kezang Dolkar Dorji

Tarayana Foundation

Ms. Sonam Dema Drukpa

Office of Consumer Protection, MoEA

Mr. Yeshi Jamtsho
Ms.Yeshey Wangmo

Agency for Promotion of Indigenous Craft (APIC)

Mr. Cheki Dorji

Bhutan Standards Bhutan

Director General
(Ex-officio member)

Member Secretary

Tek Bdr. Chhetri
Standardization Division
Bhutan Standards Bureau