

Sisal Industry- Code of Practice

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

ICIPE - International Centre of Insect Physiology and Ecology
AFA - Agriculture and Food Authority - Fibre Crops Directorate
KIRDI - Kenya Industrial Research And Development Institute
KALRO – Kenya Agricultural & Livestock Research Organization
Spin Knit Limited
Spinners and Spinners Limited
Egerton University
Rivatex East Africa Limited
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Sisal Industry- Code of Practice

KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031
E-Mail: info@kebs.org, Web: <http://www.kebs.org>

Coast Region

P.O. Box 99376, Mombasa-80100
Tel.: (+254 041) 229563, 230939/40
Fax: (+254 041) 229448

Lake Region

P.O. Box 2949, Kisumu-40100
Tel.: (+254 057) 23549, 22396
Fax: (+254 057) 21814

Rift Valley Region

P.O. Box 2138, Nakuru-20100
Tel.: (+254 051) 210553, 210555

Foreword

This Kenya Standard was prepared by the Blankets, non-wovens, threads and fibres Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

Sisal belongs to the Agave genus which consists of more than 250 species worldwide. It is a drought tolerant crop that is an important source of hard fibre bringing in domestic and foreign revenue to the economy. The fibre produced is often converted to various products such as rope, sacks, carpets and crafts.

Sisal was introduced in Kenya from Tanganyika presently known as Tanzania in 1903. Sisal production and processing along its value chain soon after became a commercially organized agricultural entity in the country. It is therefore one of the longest surviving, yet viable, agriculturally based industries in the country suitable for growing in semi-arid areas. The Country has a potential to produce 40,000 metric tonnes annually.

This code of practice has been developed to guide the sector in order to increase sisal production efficiency and quality with view to maintain and enhance the country's market share globally.

During the preparation of this standard, reference was made to following document(s):

Sisal Technical Handbook

Crops Act No 16

Production and Characterization of Kenyan Sisal. Asian Journal of Textile, 2: 17-25.

Acknowledgment is hereby made for assistance received from these sources.

Sisal Industry- Code of Practice

1 Scope

The COP specifies requirements and recommendations based on good practices in carrying out production, sisal leaf processing, storage, inspection, sisal fibre processing, transportation and marketing of sisal (see flow chart in annex 4).

It is applicable to all players across the sisal value chain including farmers, processors, sisal buyers, extension agents, researchers, regulators and consumers.

2 Normative references

The documents listed below are regarded as being invaluable when referring to specific areas of the code of practice. It is important to note that in using any of the dated normative references, only the edition cited is relevant. For any undated normative reference, only the latest edition, including any amendments, applies.

It is, therefore, the responsibility of the user of this document to ensure that for each of normative references cited, only latest edition of the documents are used.

- 2.1 The Crops Act No. 16
- 2.2 The Occupational Safety and Health Act
- 2.3 Laws of Kenya; Seeds and Plant Varieties Act, CAP 326.
- 2.4 Weights and Measures Act, CAP 513
- 2.5 The Pest Control Products Act, CAP 346
- 2.6 The Factories and Other Places of Work Act CAP 514.
- 2.7 Environmental Management and Coordination Act
- 2.8 Sisal Technical Handbook
- 2.9 KS1829: Labelling of products – general requirements
- 2.10 KS 1388: Methods of sampling for testing of textile fibres

3 Terms and definitions

For the purposes of this code of practice, the following terms and definitions shall apply:

3.1 Authority

The Agriculture and Food Authority as established under Section 3 of the Agriculture Fisheries and Food Authority Act, No. 13 of 2013. The statute law (miscellaneous amendments) No. 7 of 2016.

3.2 Bogas

Waste from processing of green leaf using a decorticator.

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- 3.3 Bulbil
A small, vegetatively derived plantlet produced on an inflorescence.
- 3.4 Bulbil nursery material
Planting material obtained from nurseries established using bulbils.
- 3.5 Central spike
Bud of immature leaves packed tightly around the meristem until they unfurl.
- 3.6 Chemical control of pests and diseases
Use of man-made products to regulate pests and diseases.
- 3.7 Cultural control of pests and diseases
Management of pest and diseases without use of chemicals, this may include; destruction of crop residues, crop rotation and use of trap crops.
- 3.8 Decorticator
A machine for stripping off the skin (bark) and the pulp to obtain fibres.
- 3.9 Environment
Physical factors of the surroundings of human beings including land, water, atmosphere, climate, sound, odour, taste, biological factors of animals and plants and the social factor of aesthetics and includes both the natural and the built surroundings.
- 3.10 Export Permit
Control document issued by the Authority to ensure that sisal fibre exported by Marketing Agents comply with the provisions of Crops Act.
- 3.11 Inspector
Person gazetted under the provisions of Crops Act to check sisal fibre to ensure compliance to the specified requirements.
- 3.12 Leaf cutter
Person who harvests sisal leaf.
- 3.11 License
Document issued by the Authority granting the holder to exercise certain privileges to deal in sisal, without which, would constitute an illegal act.

- 3.12 Marketing Agent
Person licensed by the Authority to trade in sisal fibre.
- 3.13 Medium tilth
Condition of tilled soil that forms a moderately compact and firm seedbed that is neither cloddy nor loose.
- 3.14 Meristem
Undifferentiated cells that are capable of dividing and differentiating into specialized tissues such as roots or shoots
- 3.15 Meristematic tissue culture
Culturing of apical or auxillary meristems in an artificial environment (*in vitro*) to form sisal plantlets.
- 3.16 Person
Includes an individual, entity, company, association or any other incorporated body.
- 3.17 Pole
Flowering structure with an inflorescence containing flowers and bulbils formed towards the end of the productive life of agaves as a result of the apical meristem, terminating the production of leaves.
- 3.18 Seedling
Young plant.
- 3.19 Spinner
A person who converts sisal fibre into yarn (twisting together of drawn-out strands).
- 3.20 Tow
Coarse and broken fibre, removed during processing of sisal

4 REQUIREMENTS

4.1 Site Selection

The site should be located in an area where cultivation is not restricted by any regulatory authority as per existing legislation(s). In this regard, the site should be suitable for sustainable sisal production in the following areas:-

4.1.1 The specific planting site should not contain any residues of hazardous substances that are likely to be of environmental concern or posing health and safety risk.

4.1.2 Where the planting site is located near or in the vicinity of an industry, or in any other high risk area, a risk assessment shall be conducted by a regulatory authority to determine the suitability of the site. A risk assessment report shall be maintained.

4.1.3 The basic requirements for growing sisal including temperature, altitude, rainfall, (available moisture), well-draining soil, soil pH and nutrients should be suitable for sisal production as indicated in the Crops Act No.16 and Sisal Technical Handbook. All corresponding records shall be maintained.

5 LAND PREPARATION

5.1 Field Operations

For optimum sisal production, the land should be appropriately prepared preferably one month before the expected time of rains or planting. Specifically, the activities listed below will be essential in contributing towards high yields of sisal.

5.1.1 The selected land should be prepared, using machinery or manual implements, until medium tilth is attained (refer to the Sisal Technical Handbook).

5.1.2 In conservation farming, where herbicides are applied, only those products that have been recommended by Pest Control Products Board (PCPB) shall be used.

5.1.3 In water logged areas, furrowing is recommended as an additional land preparation operation to drain excess water.

5.1.4 In areas with scarce rainfall, tied ridging is recommended for soil moisture conservation.

5.1.5 Where necessary, soil amendment, based on site assessment report, should be carried out to bring the site to its optimum production levels. Record for site assessment report shall be maintained.

6. PLANTING

6.1 Planting Materials

Sisal propagates asexually through suckers (rhizome offshoots) and bulbils and from plantlets developed *in vitro* from Meristematic Tissue Culture (MTC). Both suckers and bulbils are periodically collected for planting in nurseries. Although sisal can be established directly from suckers, it is recommended to use bulbil nursery materials or planting material developed from meristematic tissue culture. Bulbils and *in vitro* plantlets on the other hand already possess a root system but must ~~still~~ be planted out in the nursery for hardening so that their survival rate in plantation sites is substantially improved. In establishing a nursery, the nursery bed preparation, manuring and fertilizer application, spacing and weed management shall be undertaken in accordance to the Sisal Technical Handbook.

Seedlings for planting should be obtained from varieties that are approved by the Seeds and Plant Varieties Act, Cap 326.

6.1.1 Meristematic Tissue Culture

In vitro, MTC plantlets constitute an alternative route for micro propagation. They are developed from culturing of apical meristems located at the tip of the plant or auxillary meristems located at the axil of leaves. MTC involves promoting the development of already existing organized regions whose function is precisely to form new shoots. Rooted plantlets are transferred into the greenhouse for acclimatization before being transferred into an open nursery for hardening.

6.1.2 Bulbil Nursery Material

6.1.2.1 Bulbils harvested from the oldest healthy sisal plants are first planted in a nursery bed for further nurturing before being transplanted (re-planted) into the field site as young sisal plants.

6.1.2.2 After being harvested (collected) from the old, healthy sisal plants and before being planted into nurseries, bulbils are graded into equal sizes, treated with the recommended fungicides and insecticides.

6.1.2.3 Once they are in the nursery, bulbils should be allowed to grow for a period of 12-18 months to become young sisal plants. After this period, the sisal plants will have hardened sufficiently and grown to a size that is adequate for planting out in the fields before the onset of the rains

6.1.2.4 Before being planted out in the field they should be lifted and graded according to size. This grading is done in order to ensure the crop matures uniformly and for efficient field management during the growth period. The sisal plants are placed in different batches of the same size range and thereafter transplanted into different sections of the fields, based on size.

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6.1.3 Suckers

6.1.3.1 Sisal can be established from suckers. These are miniature plants that emerge from the rhizomes of the mother plant. While they are faster in establishing sisal crop and readily available, they are commonly attacked by pest and diseases, and the fields lack uniformity in plant size, if planted directly (by skipping the nursery stage). Additionally, a crop established using suckers as planting material has a shorter production cycle.

6.1.3.2 Records on the source and variety of planting materials shall be maintained.

6.2 Field Establishment

6.2.1 Before transplanting into the field, the roots of the planting materials (6.1.) should be trimmed to encourage faster development of new roots and left in the sun for 2-4 weeks to increase survival in the field.

6.2.2 Before planting, the materials are dipped in fungicides and insecticides, recommended by PCPB, to prevent insect and fungal attack.

6.2.3 Planting should be done using manual implements and preferably 4-6 weeks before onset of rains to enable sisal derive most benefits and take advantage of nitrogen flush.

6.2.4 Plant spacing and depth shall be done in accordance with the Sisal Technical Handbook. The spacing adopted depends on whether the operations on the farm are mechanized or manual. Where mechanized operations are used, wider spacing will be required depending on the management adopted. Records on date of planting, planting space and depth shall be maintained.

6.2.4.1 When planting, remove the dry leaves surrounding the rooting base and plant in shallow holes where the roots of bulbil nursery material fits well. The correct planting depth depends upon the size of the plant. Normally, 6-8 cm is sufficient for plants that are 35-40 cm tall.

6.4.2.2 For large bulbil nursery material, it is recommended to tie the leaves together around the central spike for convenience during transportation and transplanting. It also allows the first weeding to be done with ease and thereafter, the strings are cut or left to disintegrate naturally.

6.3 Fertilizer

6.3.1 The choice of fertilizer and recommended application rates should be guided by soil test results

6.3.2 Sisal waste in most cases can be used to supply organic phosphorus to the crop.

6.3.3 Farmers are encouraged to use a combination of inorganic and organic fertilizers to improve soil physical and biological properties.

6.3.3 Record on type of fertilizer and application rates shall be maintained.

6.4 Intercropping

6.4.1 Depending on the rate of growth, sisal can be intercropped within the first 3 years with the recommended crops. This may offset the costs of establishment and maintenance of the sisal crop.

6.4.2 Other benefits of intercropping include suppression of weeds and provision of soil cover to reduce soil erosion. Further references can be made to Sisal Technical Handbook.

6.4.3 Record on the type of intercrops shall be maintained.

7 WEED CONTROL

Weeding reduces competition for nutrients, water, sunlight with sisal plants, and to prevent pests and diseases present in alternate hosts. De-suckering is also done during weeding.

7.1 Weeding is done by hand, mechanical, grazing or by use of herbicides. Weed control can also be done using cover crop during the first 3 years. The method used should not injure the crop or cause damage to the environment.

7.2 Where herbicides are used, they should be approved by the regulatory authority (PCPB) and farmers should follow instructions of use.

7.3 Records on start and end dates, the method of weeding and type of herbicides used shall be maintained.

8 PESTS AND DISEASE CONTROL

After field establishment, the choice of pesticides and fungicides should be determined by the results of pest and disease scouting and as recommended in the Pest Control Products Act, CAP 346.

8.1 Pests and disease control may be done using cultural and chemical methods.

8.2 Where pesticides and fungicides are used, they shall be handled in a manner that ensures the safety of handlers and the environment as guided by Occupational Safety and Health Act (OSHA), and EMCA.

8.3 Records on pests and diseases incidences, as well as application dates for the pesticides and fungicides used shall be maintained.

9 HARVESTING

Harvesting of leaf should be done at most bi-annually per plant depending on variety and age.

Harvesting during wet weather is not recommended due to challenges in transportation of leaf and drying of the fibre.

9.1 Harvesting of mature leaves starts 2-3 years after planting as it increases fibre yields. Thereafter harvesting will continue for a period of 8-15 years depending on variety. The general practice is to cut all leaves below those which point upwards at an angle of about 45 degrees. For further information, refer to Sisal Technical Handbook.

9.1.1 During the initial harvesting, the lowest leaves (sand leaves) should be cut and discarded. Such leaves do not produce useful fibres and would be difficult to decorticate.

9.1.2 Delaying the first cut, results in reduction of fiber yield and early development of the pole which contributes to further losses in fibre production.

9.1.3 Overcutting of the leaf should be avoided as it causes reduction in fiber content.

9.1.4 During harvesting, leaves are cut and sorted by length and arranged in 25-27 leaves to make a leaf bundle.

9.1.5 Extensively damaged leaves are discarded. It is a good agricultural practice to aggregate leaf bundles in batches of 100, with each batch forming a leaf metre weighing approximately 1 ton.

9.1.6 Thereafter, the leaf metres are placed along collection points and transported for decortication.

9.1.7 Records on number of harvested leaf metres, date of harvest and identification of leaf cutters involved shall be maintained.

10 SISAL LEAF PROCESSING

Sisal leaf processing involves decortication, followed by drying, brushing, grading, baling and storage of fibre. Only licensed sisal factory operators, including small and medium processors, shall deal in sisal leaf processing. The license is issued by the Authority.

10.1 Decortication

Decortication is the process of extracting the fibre from sisal leaf. To maintain fibre quality and better recovery, decortication should be done within 24 hours after harvesting.

There are two methods of decortication.

10.1.1 Wet method

The method entails introduction of water during sisal fibre extraction process using a decorticator, Water is utilized for cleaning fiber and washing away byproducts. Normally, in wet decortication fibre is sorted into long and short fibres.

10.1.2 Dry method

This method involves extraction of sisal without introduction of water using a mechanical or manual decorticators.

10.1.2.1 For best practice, the fibre should immediately be washed after decortication to improve its quality. (For further details on decortication refer to Sisal Technical Handbook.)

10.1.2.2 Records on tonnage decorticated, date of decortication and identification of the operators involved shall be maintained.

10.1.3 The process of decortication also generates bogas (about 95.5-97.0% of leaf weight) as a byproduct and waste water. Bogas can be used for various purposes such as renewable energy production, organic fertilizer and animal feed.

10.1.4 Waste water may be treated and recycled for various purposes such as irrigation. Bogas and waste water should be managed in compliance with EMCA Act.

10.2 Drying

10.2.1 After decortication, the fibre is separated into two groups of long and short with each group consisting of a range of lengths.

10.2.2 Thereafter the fiber is spread over drying lines in respective groups. The fibre must be spread out in a such a way as to avoid kinking and staining.

10.2.3 To preserve the quality of fibre ensure drying to an optimum moisture content of 10%. For sun-drying, this would take 6-8 hours. Drying for longer hours lowers the quality of the fibre.

10.2.4 Depending on the scale of operation, the fibre is either sold locally or taken for brushing. The local buyer aggregates the fibres and sells to licensed marketing agent or processor for brushing and further processing.

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10.2.5 Records on the moisture content before storage awaiting brushing shall be maintained.

10.3 Brushing

Brushing takes place after drying.

10.3.1 The short and long fibres from the drying lines are separately fed manually onto the brushing machine which consists of a brushing machine table and enclosed revolving metal beaters.

10.3.2 Brushing removes tow and impurities. It also straightens and frees individual fibres from each other. To reduce friction and loss of fibre, it is recommended that recommended oil is applied on the table.

10.3.3 Records on quantities of fibre before and after brushing for each batch, date and identification of the operators shall be maintained.

10.4 Grading

Grading is the separation of the brushed fiber into various categories which is done based on length and visual determination of color and level of impurities.

10.4.1 Fibre length being the predominant parameter, is measured by the factory owner in compliance to the Crop Act, No. 16 using specifications set by the sisal growers associations from East Africa and the London Sisal Association. (For further details, refer to the Sisal Technical Handbook)

10.4.2 Records on sisal grades and respective quantities produced shall be maintained.

10.5 Sisal Baling

Sisal baling is the process of pressing the sisal fibre into the prescribed weights and volume.

10.5.1 The pressed fibre is secured using preferably natural materials such as sisal ropes. During pressing, each grade shall be baled separately into standard weights of 100, 200, and 250 kilogram bales.

10.5.2 Other bale weights can be considered depending on the consumer preference and subject to approval by the Authority.

10.5.3 The weighing machines used should be calibrated in line with Weights and Measures Act.

10.5.4 Records on calibration status, number of bales produced, weight per grade, identification of the bale operator and date of baling shall be maintained.

10.6 Labelling

The bales shall be labelled legibly and indelibly in accordance to KS 1829 – Labelling Requirements and Sisal Technical Handbook with the following information:

- 10.6.1 product name,
- 10.6.2 grade,
- 10.6.3 trade mark of the producer,
- 10.6.4 country of origin,
- 10.6.5 bale number,
- 10.6.6 date of production (baling) and
- 10.6.7 bale net weight in kilograms.

Note: The label should preferably be made from a natural fibre fabric. Where ink is used for labelling, it should not penetrate to the fibre to avoid contamination.

10.7 Storage

10.7.1 Storage of sisal should be carried out in a facility approved by the Authority. Storage area should be sufficient to store fibre awaiting brushing and for storage of bales waiting for transportation to the market.

10.7.2 To preserve the quality of sisal fibre (color, moisture content, and physical fibre properties), the storage area should be:

10.7.2.1 Dry and well ventilated.

10.7.2.2 Fumigated before storage of the sisal fibre and proofed against rodents, water leakage and direct sunlight.

10.7.2.3 Equipped with a fire detection and fighting system in accordance with the OSHA and Factories and Other Places of Work Act CAP 514.

10.7.2.4 Monitored at specified intervals (daily, weekly or monthly) to reduce risks of colour deterioration, rot, contamination among others based on prevailing environment.

10.7.3 The bales should be stacked on pallets and avoid direct contact with the walls.

10.7.3.1 Stacking should be done in a manner that ensures stability of the bales and prevent any fall or collapse of the stacks.

10.7.3.2 It should allow easy access for human and machinery and not to interfere with the lighting, ventilation and safety equipment in accordance with OSHA.

10.7.4 Bales of different grades should be stacked and stored separately to avoid mix up.

10.7.5 Records on number of bales in the store, weight per grade, bale number, date of receipt and dispatch shall be maintained.

11 INSPECTION FOR QUALITY ASSURANCE

11.1 Inspection of sisal fibre shall take place at the owner's premises before marketing.

11.2 An authorized Inspector shall take samples in accordance with KS 1388. Samples shall be tested to ensure conformity to grades as defined by East African Sisal Growers Association and the London Sisal Association.

11.3 The Inspector shall verify that bales are labelled as per clause 10.6 on labelling). The weight and moisture content are important parameters in sisal fibre trade and must be recorded during inspection in accordance to KS 124.

11.4 An inspection report detailing all the above parameters and any important observation shall be maintained.

12 MARKETING OF SISAL FIBRE

Over 80% of the sisal fibre produced in Kenya is exported, while the remaining 20% Unwashed Hand Decorticated Sisal (UHDS), produced by smallholders is processed in the cordage and cottage industries to make products for both local and export markets.

12.1 Marketing of sisal fibre is influenced by quality levels, global stocks and source (country) which directly impacts the price. In addition, sisal fibre prices may be affected by the cost of other fibres and the fluctuation of exchange rate.

12.2 Marketing Agents shall be licensed annually by the Authority prior to dealing in sisal fibre marketing. Where consignments are destined for export, the licensed marketing agent shall apply for export permit of every consignment, from the Authority, using approved systems.

12.3 The price of sisal fibre is based on information provided by the Authority, guided by the prevailing global market price and contracts between buyers and sellers to ensure transparency in compliance with the Crops Act 2013.

13 FINISHED SISAL PRODUCTS

Sisal fibre is converted into various finished products mainly through the process of spinning, weaving and/or colouring.

13.1 Spinning, Weaving and Colouring

13.1.1 Spinning involves the continuous conversion of sisal fibre into sisal yarns, twines ropes and fabrics by the Spinner for value addition. Spinners shall be licensed annually by the Authority prior to dealing in sisal fibre processing into sisal products.

13.1.2 During the weaving process, yarns are converted into fabrics by interlacing yarns using various methods including power looms, hand looms as well as hand weaving. Sisal fabrics or strands are processed into various finished sisal products.

13.1.3 To add value, yarns, twines and fabrics are dyed or printed by the processor using manual or mechanical means. The dyes used should not be harmful to the users and the environment in accordance with EMCA.

13.1.4 The finished products must comply with the respective national standard specifications. (See Annex 3) List of applicable product standards).

13.1.5 Record of manufactured products detailing product type, weight, number, square meters, running meters as case may be shall be maintained.

13.2 Finished Products Storage

13.2.1 To preserve the quality of finished sisal products, the storage area should be:

13.2.1.1 Dry and well ventilated.

13.2.1.2 Fumigated and proofed against rodents, water leakage and direct sunlight.

13.2.1.3 Equipped with a fire detection and fighting system in accordance with the OSHA and Factories and Other Places of Work Act CAP 514.

13.2.1.4 Monitored at specified intervals (daily, weekly or monthly) to reduce risks of rot and contamination among others based on prevailing environment.

13.2.2 Finished products may be baled or bundled and stacked on pallets in such a way as to avoid direct contact with the walls.

13.2.3 Stacking shall be done in a manner that prevents any fall or collapse of the stacks and allow easy access for workers and machinery. The stacks should not interfere with lighting, ventilation and safety equipment in accordance with OSHA.

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13.2.4 Different finished sisal product categories should be stacked and stored separately to avoid mix up.

13.2.5 Records on number of bales in the store, weight per grade, bale number, date of receipt and dispatch shall be maintained.

13.3 Marketing of Finished Sisal Products

13.3.1 Market access for finished sisal products can be improved through advertising and merchandising.

13.3.2 Records shall be maintained on marketed finished products detailing category, quantity, price and market destination.

Note:2 To remain competitive, continuous research on product development for innovation and patenting is encouraged.

14 TRANSPORTATION

This mainly involves movement of sisal bales and finished products from the owner premises to the market.

14.1 To preserve quality, the transportation vessel should meet the following conditions in accordance with the Crops Act: -

14.1.1 Clean and free from contaminants.

14.1.2 Properly secured to prevent spillage.

14.1.3` Dry and well covered to prevent secondary contamination.

Annex 1 (normative)

LIST OF APPLICABLE KENYA STANDARDS(KEBS)

Note that this list is not exhaustive and only includes some of the most commonly used standards

- | | |
|-----|--|
| A1 | KS ISO 1181 Fibre ropes - Manila and sisal - 3-, 4- and 8-strand ropes. |
| A2 | KS 274 Sisal agricultural baler twines - Specification. |
| A3 | KS 642 Sisal packing twines - Specification. |
| A4 | KS 779-2 Specification for carpets - Part 2: Sisal carpets. |
| A5 | KS 748-1 Specification for coffee drying cloth - Part 1: Sisal cloth. |
| A6 | KS 1124 Specification for sisal polishing cloth. |
| A7 | KS 519 Specification for sisal ropes. |
| A8 | KS 273 Specification for woven bags (100 per cent) for clean coffee beans /Woven Fabrics. |
| A9 | KS 944-1 Specification for woven bags (100% sisal) for green tea leaves. Part 1: Three-dimensional type. |
| A10 | KS 944-2 Specification for woven bags (100% sisal) for green tea leaves Part 2: Two-dimensional type. |
| A11 | KS 544 Specification for woven bags (natural fibre) for rice. |
| A12 | KS 134 Specification for woven bags (natural fibres) for sugar. |
| A13 | KS EAS 221 Woven bags (100 % sisal) for clean coffee beans – Specification. |
| A14 | KS EAS 156-3: Woven bags from natural fibres - Specification - Part 3: Woven bags for sugar. |

Annex 2

(Informative)

LIST OF RECORDS

- B1 A risk assessment report on suitability of production site. (Clause 4.1(ii))
- B2 Site assessment report (Clause 4.1(iii) and 5.1(v),
- B3 Planting records (6.1., 6.2, 6.3 and 6.4).
- B4 Weed, pest and disease control records. (Clause 7.0 and 8.0)
- B5 Harvesting record. (Clause 9.0)
- B6 Decortication, drying and brushing records (Clause 10.1, 10.2 and 10.3).
- B7 Grading and baling records (Clause 10.4 and 10.5).
- B8 Storage and dispatch records (Clause 10.7).
- B9 Inspection report (Clause 11.0).
- B10 Product type, quantity and specifications record (Clause 13.1)
- B11 Stock and marketing records (13.2 and 13.3)

Annex C
(Normative)

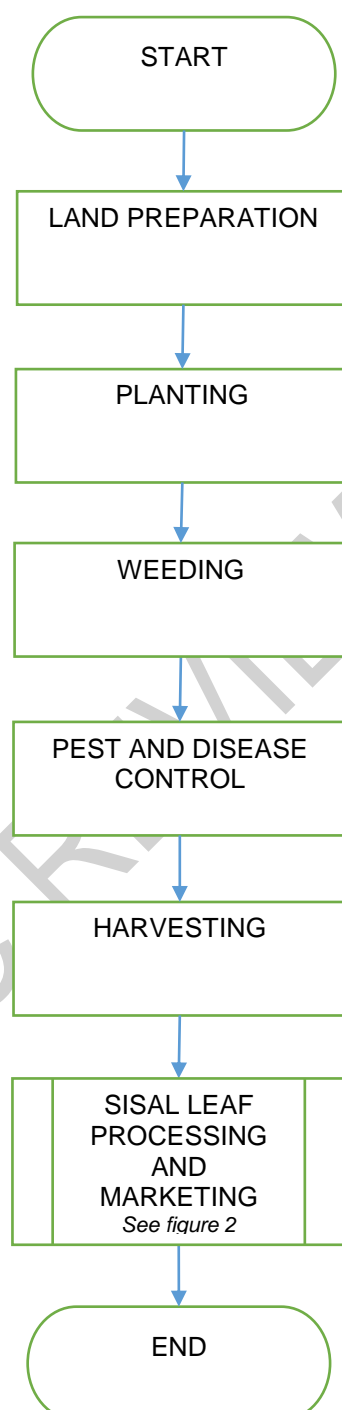


Figure 1. Flowchart on the Main Steps in Sisal Value Chain

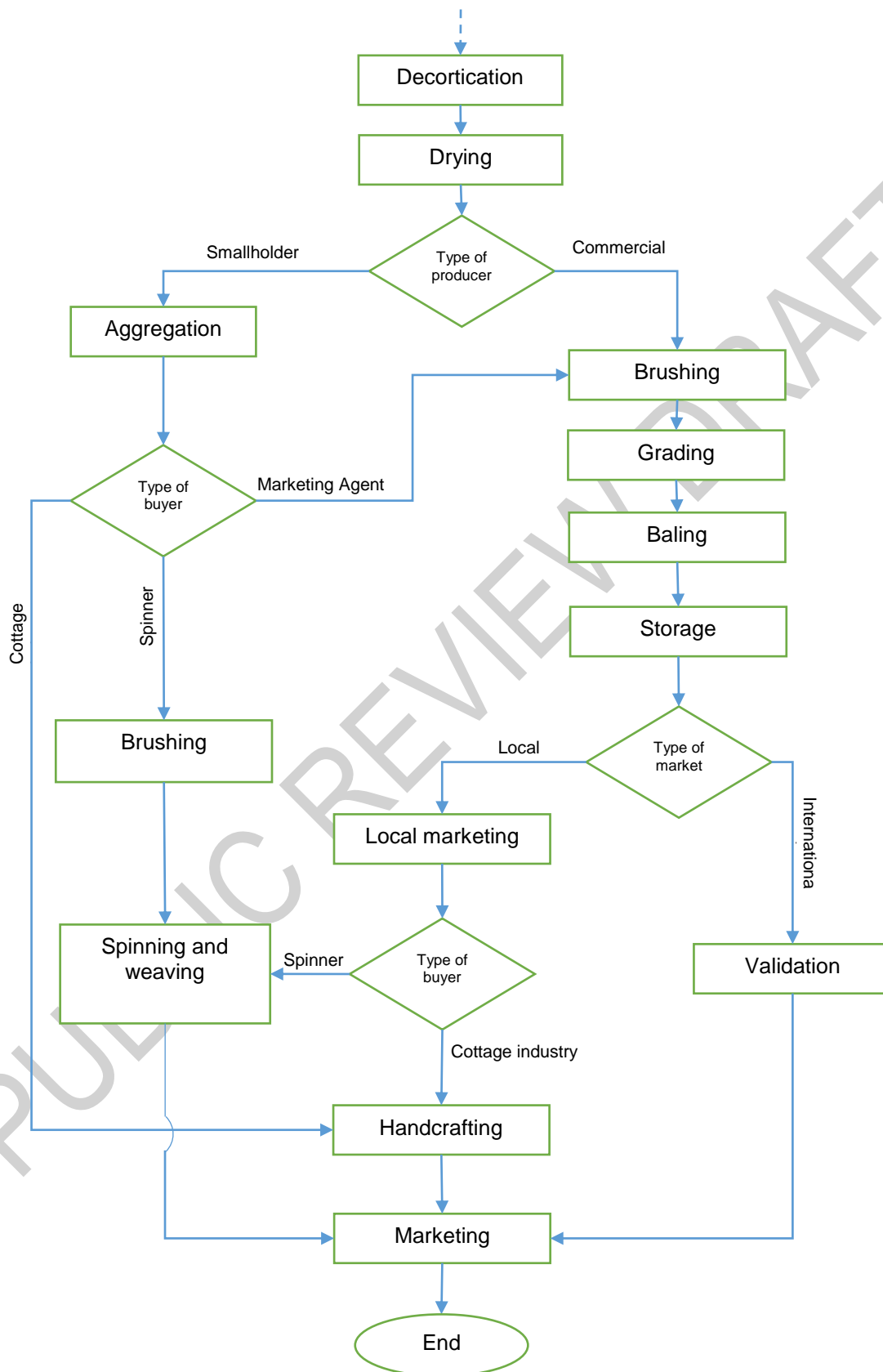


Figure 2: Flowchart on Leaf Processing and Marketing

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PUBLIC REVIEW DRAFT