NORTHERN TOBACCO
A RIFT VALLEY COMPANY

SUSTAINABLE TOBACCO PROGRAMME (STP)

BEST PRACTICES

AGRICULTURAL LABOUR PRACTICES

SUSTAINABLE TOBACCO PROGRAMME (STP)

Our customers are committed to the sustainable production of tobacco to enable a consistent supply of tobacco products to meet adult users' expectations, as well as quality and regulatory requirements. Our customers define sustainable tobacco production as the efficient production of quality tobacco in conditions that limit as much as possible the impact on the natural environment and that improve the socioeconomic conditions of the people and communities involved in its production. Sustainable tobacco production is the logical outcome of Northern Tobacco and growers consistently applying the Sustainable Tobacco Programme (STP).

The Sustainable Tobacco Programme defines the Guiding Principles and Criteria that should be met by Northern Tobacco and growers.

- Guiding Principles are short statements that should guide Northern Tobacco and growers working towards the sustainability of tobacco production; Guiding Principles represent the aspirational objectives for Northern Tobacco and growers to work towards and ultimately meet.
- Criteria will be used to measure how well the practices on the farm or at Northern Tobacco's facilities are aligned with the specific Guiding Principle.

These Guiding Principles and Criteria are organized around four focus areas (Pillars); Crop, Environment, People and Facilities. Governance is the foundation of these Pillars and incorporates the management processes that must be in place to successfully implement the Sustainable Tobacco Programme.

Source: Sustainable Tobacco Programme Guide 1.0 (2016)

BEST PRACTICE

INTRODUCTION

This document describes the fundamental Leaf Growing Policies and Procedures to achieve the objectives of volume, quality and cost in an environmentally and socially responsible manner.

1. **INTEGRATED CROP MANAGEMENT**
   Integrated Crop Management (ICM) is a concept where economically viable production of leaf and positive environmental management is balanced. It uses the best of traditional crop husbandry with the more recent developments in crop and environmental protection.

2. **TOBACCO GROWING POLICIES**
   Agronomic practices employed under the ICM system aim to:
   - Reduce the reliance on agricultural inputs;
   - Protect the environment;
   - Conserve and improve soil fertility;
   - Preserve water resources;
   - Protect growers' health and reduce the level of hard physical (manual) labour;
   - Optimise yields, quality and growers' gross margins whilst still ensuring both global and/or local competitiveness.

   Where Crop Protection Agents (CPA's) are deemed to be necessary, the selection and usage must adhere to BAT Agrochemical Procedures. Priority areas including:
   - Selection of approved chemicals;
   - The safe usage of CPA's in all aspects of handling, application, storage and disposal;
   - Availability of appropriate training to employees/growers;
   - Monitoring and review through regular residue testing.

   The fuel used for tobacco curing should be the most appropriate. Fuel from renewable sources should be used if available and ongoing advances in curing technology should be used to optimise fuel usage and efficiency, reduce labour requirements and protect the grower's health and safety.

3. **SUSTAINABLE TOBACCO PROGRAMME**

   Northern Tobacco (NT) adheres to the Sustainable Tobacco Programme, which defines sustainable tobacco production as the efficient production of quality tobacco in conditions that limit as much as possible the impact on the natural environment and that improve the socioeconomic conditions of the people and communities involved in its production. **Sustainable tobacco production is the logical outcome of growers and NT applying the Sustainable Tobacco Programme (STP).**

4. **FERTILISER AND LIMING MANAGEMENT (Criteria C3.3)**

   Evaluation of Soil Fertility
   - Soil testing is the only sure way to determine the amount of lime needed to correct soil acidity as well as the proper amount of fertilizer to produce a good tobacco crop. When linked to soil testing, knowledge of the specific characteristics of the area – including previous liming and fertilizing, quantitative and qualitative yield of tobacco in previous harvest, presence and or frequency of occurrence of

nematodes, and the results of experiments and or tests conducted under similar conditions – will lead to a more accurate interpretation of the analytical results and better recommendations as to liming and fertilizing. Therefore, the two main points when evaluating soil fertility are soil sampling (representativeness) and the correct application of lime and fertilizer (product quality and dosage, time and method of application). Soil testing should be more comparable over time and determine the levels of:

- Macro nutrients (Nitrogen, Phosphorus and Potassium)
- Trace elements (e.g. Boron, Iron, Manganese, Zinc, Sulphur)
- Organic matter
- Soil pH

It is recommended that the sampling of a growing area take place every 5 years so that fertilizer recommendations are made that meet the targets of maximum productivity and tobacco quality at compatible costs on the basis of the fertility survey of these soils.

The use of Organic and Mineral Fertilizers

Mineral fertilizers recommended for tobacco growing are basically the same used for other crops. The only limitation relates to fertilizers containing chloride in view of the fact that tobacco leaves, the chloride contents of which are above 1% have combustibility problems.

It is recommended that organic fertilizers be used, provided their origin and composition are known, especially regarding the possibility of heavy metals and or other contaminants being present in association with mineral fertilizers. In essences, mineral fertilizers should be regarded as complimentary to organic fertilizers, virtually in the same was as vitamins are complementary to normal animal diet.

5. SEEDLING PRODUCTION (Criteria 3.5)

Seed

Only approved certified seed supplied by, either the Tobacco Research Board, the Zimbabwe Tobacco Seed Association or Northern Tobacco is to be used by growers contracted to Northern Tobacco. Where seed has been supplied from suppliers other than Northern Tobacco, growers are to keep records of seed lot numbers for one year after the lot has been sown.

Seedbed Management

Seedlings should be produced in an environmentally responsible system without the use of harmful fumigants such as methyl bromide. Seedlings should be produced from certified seed of registered recommended varieties. They should be uniform, healthy and vigorous.

Suitable seedbed sites should:

- Be warm and north west facing;
- Have adequate air and moisture drainage;
- Have uniform soils (sand to sandy loam);
- Adequate water of quality (10ltrs/m^2/day of seedbed area);
- Be a suitable distance from barn and sheds to avoid disease contamination.

The seedbeds should be ring fenced with a single restricted access functional hand and washing facility.

A good seedbed to land ration should be greater than 120m^2/ha.

Germination uniformity should be assessed when the average seedling leaf is thumbnail size (approximately 15mm). Good germination uniformity is deemed when approximately 60% of the seedlings are the same size.

Growth uniformity is assessed in mid-growth when seeding stems are approximately 8cms in length. Good growth uniformity is deemed to be when approximately 60% of the seedlings are the same size.

Good insect and disease control is necessary and there should be no insect damage or diseases evident at any stage. Only use recommended CPA's and follow the timings and quantities of application for preventative action. Growers should record CPA treatments during the nursery stage. Details of each CPA treatment should include:

- CPA commercial name
- Date and Method of Application
- Amount applied
- Name of person who applied the CPA
- Targeted pest(s), disease(s), weed(s), etc.
- Field name or location

Growers must maintain records of incoming propagation material, fertilizer applications and CPA treatments during the seedbed stage.

Seedlings must be pale at the start of hardening and hardened for a period of at least 21 days or more.

6. TRANSPLANTING OF SEEDLINGS (Criteria 3.6)

Seedlings should be transplanted at a time, and using techniques, that optimise the chances of establishment and growth.

Planting should commence when the seedling is above 80% hardened. To establish this, the seedling should be able to be twisted around the finger without breaking. The seedlings should be between 7 and 8mm thick, between 15 to 18mm in length (root crown to bud) and have approximately 7 leaves.

Seedlings should be placed in a moistened hessian sack lined basket (wire or plastic) and be shielded from heat and sun in transit, and in the land.

Good planting efficiency relates to 80 to 100% of plants placed erect in the hole (not at an angle) at a consistent depth in relation to the ridge size and fertilizer position, and in the same position in each hole with the exposure of stem and leaf being consistent after covering.

Good planting management includes the regular uninterrupted supply of fresh seedlings, handed to the planter by the waiter. The water supply must be sufficient and consistent with water being applied in each hole, which is sufficient to link subsoil moisture ensuring that there are no unscheduled delays in the operation.

The key agronomic factors to optimise quality and yield include:

- Time of transplanting
- Plant spacing
- Fertilizer amount and timing
- Irrigation
- Weed and pest control

Correct numbers of workers are required in each operation ensuring smooth and continuous productivity.

Prior to planting, all workers should be adequately trained in the roles expected of them in order to achieve maximum efficiency.

7. TOPPING AND SUCKERING (Criteria 3.7)

Topping

- The removal of the growing point (topping) diverts growth back into the remaining leaves and stimulates root growth.
- The earlier this is done, the greater the effect. Research has demonstrated that for every day topping is delayed yield may decline by 1%.
- Nicotine is manufactured in the root tips and therefore the larger the root system the higher the final nicotine percentage in the leaf.
- **Bud topping** significantly increases the percentage of leaf grades. It also results in better expansion of the leaf grades and higher percentage of "flavoured" leaf i.e. it will improve quality as well as yield.
- Aim to top at between 18 and 20 leaves. The more vigorous the plant the higher the leaf number. The lowest leaf that should be counted is the first reapable leaf i.e. the first true priming.
- Removing the lower reapable leaves and then adding them on the top so that in effect topping is done later, in the belief that this will reduce the number of "filler" grades, may have the opposite effect. Research demonstrated that the higher the plant is topped the greater the proportion of filler grades. (Note that this does not include the 3 or 4 "seedbed" leaves).
- Topping may be done by leaf count (slow, laborious and often inaccurate if labour is not well trained).
- Bud topping can be done using a measuring stick.
    - As the plant grows bud leaves tend to fall away from the bud once they reach 3 to 5 cm in length.
    - When the 18^{th} or 19^{th} leaf on standard varieties falls away the bud can be removed without damaging the leaf.
    - Count leaves from the first true reapable leaf (do not include seedbeds leaves).
    - When 10% of plants have reached the 18-19 leaf stage, cut a measuring stick to the height of the shortest plant at this stage. It is easier to grasp the top leaves in a bunch and cut the stick to this height rather than the height of the bud.
    - Top all plants that are at this height and above, removing the bud.
    - Note that for each topping round, the measuring stick **may** need to be changed as the plant develops, check this before each operation.

- On a uniform crop aim to complete the land in 7days. Even when the crop is uneven, aim to finish topping in 10 to 14 days. All too often growers wait for the weaker plants to get to 18 leaves before topping, whereas it would be better to top these plants down to 14 to 16 leaves. The longer topping is delayed, the more difficult reaping becomes and the wider the grade spread will be.

Sucker Control

- When bud topping, it is risky to apply the full rate of N-decanol or local systemic (pendimethalin – Accotab) over the topped plant, the top leaves will be burnt or distorted.
- N-decanol may be poured over the top if diluted to 1:50 -70. Experiment with the rate and apply that that burns the suckers but does least damage to the top leaves. As a general rule the more rapidly the plant is growing, the more dilute the suckercide should be. When poured over the top there is less chance that axils are missed.
- When diluted to this rate, effectiveness is reduced to 7 to 10 days.
- There are 2 options – (a) repeat the dilute rate on every plant until topping is complete (no plant should receive more than 3 doses) or -

(b) apply the full rate of N-decanol (1:25) on all plants topped previously, by this stage the top leaves will have developed sufficiently to avoid damage.

- A week after topping is completed, apply a local systemic to all plants.
- If experience has indicated that late suckers are a problem, repeat the local systemic treatment 2 weeks later.
- Regardless of efficiency, misses always occur. Remove these by hand as early as possible, treating the axil using a sponge or some other suitable appliance with Accotab.
- If topping when there is a threat of rain around, it is good practice to mix a sticker with the suckercide.

8. CURING CAPACITY (Criteria 3.8)

Introduction

Curing techniques that achieve optimal quality should be employed. Cured leaves must be graded correctly and avoid over-pressing of bales. Cured tobacco must be stored correctly to maintain quality.

Planning

Land Calculation

For each planting, establish the <u>total</u> number of plants to be reaped. For example, if the crop size is 25ha <u>net</u> and the plant population is 15,000, the total reapable plants will be 375,000. From previous experience, establish the **<u>maximum</u>** ripening rate per week i.e. the number of leaves that must be removed over a 7-day period from the plant at peak ripening. Calculate the total number of leaves to be reaped per day as follows:

Leaves reaped/day = total reapable plants x leaves reaped per plant/7days.

From this calculation, establish which planting will have the highest number of leaves to be reaped in a day. This figure should be used to determine the Curing Facility: Land ratio. (see below).

Curing Facility Calculation

For each form of curing facility, calculate the exact number of leaves that the curing facility will hold at the time that the maximum ripening occurs. (*Ensure that the number of leaves tied per clip, string or bulk frame matches the size of leaf at that particular time*). Determine the turn around time for each type of facility at peak ripening. (*e.g. if a barn takes 8 days to cure and 2 days to cool, condition and unload, then the turn around period will be 10 days therefore the barn will be filled every 11th day).* Calculate the total number of leaves that each facility will cure per day as follows:

Leaves/facility/day = total leaves cured per cycle/turn around time.

Add each of the above totals to calculate the Total Curing Capacity/Day.

Curing Facility: Land Ratio = <u>Total Curing Capacity/Day</u>
Leaves Reaped/day

Very Good: Ratio >1.2
Good: Ratio 1.0 – 1.2
Fair: Ratio 0.8 – 1.0
Poor: Ratio <0.8

Curing Time

Assess this period from the time that the curing facility is loaded to the time that the fire is drawn at the end of the cure. Note that if different curing systems are used, calculate the proportion of each system contributing to the curing season and determine the average overall curing time.

Good: <8 days
Fair: 8 – 9 days
Poor: >9 days.

Curing Facilities

Foundations, walls, roofs, chimneys, doors, furnaces/heat exchangers, tiers, trolleys, floors, vents must be well built and maintained. They must be well drained and functioning efficiently.

Ventilation (1cfm = 0.589m^3/hr.)

If curing facilities include both forced air and conventional, calculate the ventilation capacity of each, then estimate the average for both. If facilities are used as back-up in times of maximum reaping, estimate the proportion that the facility is in operation and calculate ventilation on a pro-rata basis.

Good: Forced air capacity >250m^3/hr/1,000 leaves/day;
Conventional vents (bottom and top) area >2.5% of the floor area of the barn;
Fair: Forced air capacity 150 – 250m^3/hr/1,000 leaves/day
Conventional vents area 2.0 – 2.5% of barn floor area;
Poor: Forced air capacity < 150m^3/hr/1,000 leaves/day
Conventional vents area <2.0% of barn floor area.

Curing Fuel

Calculate the total fuel used to cure tobacco in the season and compare this with the total tobacco cured. For every cure, measure the fuel used for that cure (*a reasonably accurate method is to record the number of containers (buckets) that is used and know the weight of the bucket full of coal. Wood can be estimated accurately by measuring the volume used).* If a combination of wood and coal is used, calculate the average proportion used.

Good: Coal: <2kg coal/kg cured tobacco;
Wood: <10m^3/1,000kg cured tobacco;
Fair: Coal: 2 – 4kg coal/kg cured tobacco;
Wood: 10 – 15m^3/1,000kg cured tobacco;
Poor: Coal: >4kg coal/kg cured tobacco;
Wood: 15m^3/1,000kg cured tobacco.

Curing Technique

Good: Cured leaf is rich, bright, deep colour, no green, soft natured, uniformly "crinkled", insignificant barn spot or sponging, insignificant overcoloured (*brown, shatter*), no barn rot (*bacterial or fungal)*;
Fair: Cured leaf has moderate levels of sponging, green, tends to be pale and flat in appearance, moderate amounts of barn spot or guinea fowl spot. Occasional barn rot (*bacterial or fungal)*;
Poor: Cured leaf has significant levels of sponging, has a pale, dull "boardy" appearance, significant levels of green, sever barn spot, frequent barn rot (*bacterial or fungal).*

Supervision and Records

Good: Checks on the cure are done regularly (*at least every 6 hours during the day and twice at night),* ensuring that temperature and ventilation are correct for the stage of the cure. All information must be recorded accurately and in detail on the barn card;
Poor: Checks done infrequently and barn card records "sketchy".

9. MARKET PREPARATION (Criteria 3.8)

Conditioning Cured Leaf

Good: Facilities and management allows cured leaf to cool and condition to the correct level for handling (*leaf obviously pliable) but never over conditioned – when crumpled in hand; no breakage and returns slowly to original shape; no "bruising" when lamina pressed between finger and thumb).* Breakage is minimal following unloading;
Poor: Insufficient time for conditioning. Damage and breakage to cured leaf is significant.

Temporary Storage

Good: Conditioned leaf stacked and covered correctly and allowing sufficient time to ensure that the midrib and butt of the leaf becomes sufficiently pliable to handle without damage;
Poor: Insufficient space or time to allow midribs and butts to be handled without breaking.

Storage

Good: Leaf untying ensures minimal breakage, ensuring uniform packing into bulks, rough bales, slat packs, bales etc. Stored tobacco well packed in spacious, cool ventilated shed. Bulks, rough bales, slat packs, bales correct size and stable.
Fair: Some breakage when untying, stored tobacco tends to be moderately untidy shed space slightly limiting;
Poor: Significant scrap following untying, storage space limited, bulks, slat packs etc., untidy and badly assembled and liable to breakage, poorly ventilated and temperatures fluctuate.

Grading Shed Equipment

Good: Tables (*grading, checking, tying),* correct size and number required for required output. Lighting (*natural or artificial)* sufficient in all areas. Conditioning equipment adequate and functioning correctly. Boxes or racks are sufficient and well maintained. Bailing equipment in good working order.
Poor: Equipment generally in poor working order, incorrect specifications and availability.

Grading System

Good: Free flow of tobacco through shed, no bottlenecks, no tobacco on floor at any stage, condition of leaf maintained constant through the process, grading quality good, correct number of grades for type of tobacco, bales neat and accurate;
Fair: Some evidence of bottlenecks, conditioning slightly variable, grading quality uneven, grading moderately variable;
Poor: Significant bottlenecks, conditioning difficult to maintain through the day, tobacco on the floor, grading quality substandard, incorrect number of grades for type of tobacco, bales misshaped.

Training

Good: Grading shed workers (*graders, checkers, tiers, sewing workers, bailers, waiters, sweepers)* fully appraised of their role routinely. Sample grading done with workers whenever run of tobacco changes and all workers made aware of presentation and sales problems associated with grading.
Fair: Occasional training done during the season;
Poor: No training given.

Presentation

Good: Bales well constructed to floor specifications, grouping correct, and problems such as mixed, mouldy, funked i.e. associated with handling, storage and grading is minimal.
Poor: None of the above.

10. REDUCTION OF TOBACCO-SPECIFIC NITROSAMINE (TSNA) (Criteria 3.10)

Tobacco-specific nitrosamines (TSNA) are powerful carcinogens found in tobacco and tobacco smoke in relatively high concentrations.

Growers must ensure that curing systems are maintained annually which includes but is not limited to:

- Maintenance of heat exchangers;
- Maintenance of flue pipes to minimise the risk of smoke escaping from them into the barn;
- Ensuring chimneys exceed the eight of the barn roof.

Growers are to keep maintenance records to include:

- Date of checks;
- Record of remedial work required;
- Record of remedial work carried out;
- Date remedial work carried out.

11. INTEGRATED PEST MANAGEMENT

Integrated Pest Management (IPM) is a systematic approach to crop protection that utilizes information to make better pest management decisions, with an emphasis on integrating all available alternative methods. IPM does not imply the elimination of Crop Protection Agents (CPA), but encourages their appropriate use as a defence against pests and diseases whose population cannot be maintained at acceptable levels using methods that are better for the environment. Where CPA's have to be applied, they should be used in accordance with manufacturers' recommendations and applicable laws and regulations.

NOTE: these requirements apply to both seedbeds and cropping areas.

Policy
Growers must actively pursue alternative crop protection practices, which reduce or avoid the use of synthetic pesticides by promoting IPM (e.g. crop rotations etc.).

Where CPA's are deemed necessary, the selection and usage must adhere to the relevant approved British American Tobacco (BAT) Agrochemical Procedures. Priority areas include:

- Selection of approved chemicals;
- The safe usage of agrochemicals in all aspects of handling, application, storage and disposal;
- Availability of appropriate training to growers/employees;
- Monitoring and review through regular residue testing.

Main Principles of IPM
The main principles of IPM include but are not limited to:

- Accurate identification of pests (insects, diseases, nematodes, weeds etc. To achieve the expected control of the pest, recommending the correct measures is basic. The first principle, therefore, is that all aspects of the pest be known as correct identification, life cycle and habits, damages caused to tobacco and the presence or absence of natural enemies. Knowledge of this will help in the decision making process on what measures to take and the appropriate time to control the problem.

- The crop must be ***monitored*** frequently and systematically in order to take action at the correct time. In many situations, controlling the pest when it appears in part of the field will avoid spreading the pest to the entire crop. Traps are a very useful monitoring tool that indicates the presence or absence of a number of pests. When well managed, the traps indicate if and when a measure to control a pest should be taken. The appropriate management of trap monitoring will prevent the use of pesticides when these are not needed.

- ***Threshold levels*** for each pest should be established to determine the trigger point for application of any CPA's. The presence of appropriate natural predators should be taken into account when assessing pest numbers and the necessity of applying CPA's. Any measure to control a pest should be taken only when the cost of the control is lower than the damage caused to the crop.

- Where possible, non-chemical means of control should be used. The use of biological agents and plant extracts should be the first choice against synthetic pesticides, when the field needs to be sprayed. ***Before introducing any natural agent, it must be clear that undesirable residues are not left on the leaves and no off-taste is detectable in the smoke***. Synthetic Agrochemicals should only be used when natural crop protection agents (NCPA) and cultural methods are not sufficient to control the problem. If used, their choice and application must be considered in relation to the IPM strategy and environment.

12. CROP ROTATION (Criteria C4.1)

Tobacco is the most damaging crop in rotations in that it poses the following dangers if grown continuously:

- Increased disease and nematode incidence and severity;
- Soil structural deterioration;
- Reduced water holding capacity;
- Reduced infiltration rates;
- Poor soil buffering capacity and increased soil acidification and;
- Loss of organic matter.

A proper crop and field rotation programme should be established for the reduction and or elimination of pests, improve soil fertility and minimize soil erosion. Growers are encouraged to rotate tobacco with other crops that suppress tobacco pests and to ensure tobacco-free period between crops. The most ideal cropping system is to grow nematode-resistant grass leys for at least two years between tobacco crops. Because of land pressure, rotations have to be economical, providing the desired return from both tobacco and other rotation crops. Rotations may be with either non cash crops such as Katombora Rhodes grass or with annual cash crops such as Sunhemp etc., between tobacco crops.

13. BIOLOGICAL PEST CONTROL (Criteria 4.2)

Natural Crop Protection Agents

Growers are encouraged to use NCPA's such as biological agents and plant extracts as a first choice where they have been successfully tested and registered for tobacco.

i) **Biological control agents** are normally defined as naturally occurring parasites, predators and pathogens used for the regulation of pest and disease problems. In most cases they are living organisms that, when released, will reduce the population of the target organism. Their action is slower and less dramatic than conventional synthetic pesticides but tends to be more specific. There are two main approaches:

- Imported biological control agents – a natural enemy is imported and introduced either in a continuous programme or as a single release leading to a self-sustaining population. There is a danger however, that the introduced organism also becomes a pest, so the type introduced has to be undertaken with care. It is NT's procedure that no live organisms should be imported into the country for use as bio control agents without the approval of local health and quarantine services.

- Increasing or conserving the population of indigenous biological control agents either by growing them under controlled conditions and releasing them (augmentation) or by encouraging the local population to increase naturally for example by providing additional food sources in field margins (conservation). There is less risk that this method of biological control will result in additional unforeseen pest problems compared with where new organisms are imported into an area.

Examples biological control agents are as follows:

Insects	Trichogramma	Species of wasps that parasitise eggs of Lepidoptera pests such as hornworm and budworm
	Chrysopera Encarsia	Parasitoid wasp to suppress population of greenhouse whitefly
Fungi	Trichoderma	Wide range of commercial formulations to control phytopathogenic fungi e.g. Sclerotina, Rhizoctonia Pythium
	Beauveria *Paecelomyces sp* + *Verticillium sp*	An entomopathogenic fungus (attacks insects) that controls a variety of insect pests
Virus		

ii) **Bio pesticides** – are crop protection agents in which the active ingredient is a virus, fungus or bacterium or a naturally occurring biochemical derived from a virus, fungus or bacterium.

iii) **Use of Botanicals** – Extracts from some plants species show biological activity against insects, nematodes and in some instances as plant growth regulators. As natural compounds they are usually broken down relatively quickly either by microbial degradation or by UV light. The rapid degradation makes them suitable for use in IPM situation but does not give long lasting protection. However, it should not be assumed that as natural compounds, that they are inherently safe; many of them are toxic. Risk assessments should be undertaken for each product to ensure that the products pose no undue risk to the health and safety of the operators, other people and the

environment. Appropriate control measures such as protective clothing, the basic essential safety measures and post-entry and pre-harvest intervals should be adopted.

Examples of Botanicals

Botanical Insecticides	Botanical Repellents	Botanical Growth Regulators
Pyrethrins	Neem	Coconut Oil
Neem	Essential Oils	Palm Oil
Derris Rotenone		

14. RESISTANT VARIETIES (Criteria 4.3)

Growers are discouraged from using varieties of seed other than seed supplied by either Tobacco Research Board, Zimbabwe Tobacco Seed Association or Northern Tobacco.

15. PHYSICAL CONTROL METHODS (Criteria C4.4)

Alternative Host Plants of the Tobacco Family
All weed species that harbor or attract tobacco pests should be eliminated. Wherever possible growers should also avoid growing crops belonging to the Solanceae family, such as tomatoes, potatoes and aubergines, in close proximity to tobacco.

Attractant and Repellent Plants
When available, plants that attract or repel pests should be grown in the surroundings of tobacco fields in order to reduce pressure on tobacco. Controlling the pest on the attractive plants may avoid the need to spray the tobacco field.

16. DESTRUCTION OF CROP RESIDUES (Criteria C4.5)

Destruction of Crop Residues
Live roots and stalks are perfect sites for the development of several pests. Examples of pests readily noticed in roots and suckers (growths from undestroyed stalks) include nematodes, flea beetle, aphids, budworms, Diabrotica sp, viruses, etc. Failure to destroy roots and stalks will cause higher infestation and or infection. Stalk destruction for all tobacco planted is to be completed by 15th May and seedbeds are destroyed by 31st December.

17. NATURAL PREDATORS (Criteria C4.6)

Natural Predators
Growers should provide habitats used by Natural Predators of aphids, caterpillars and other pests while avoiding spraying wherever possible if populations of appropriate pest predators are present. The Natural Predators should be identified and all possible measures taken for their conservation and enhancement.

18. ECONOMIC THRESHOLDS FOR CPA USE AND MONITORING & SCOUTING FOR PESTS AND DISEASES (Criteria C4.7)

Pesticides
Evaluate the need, method and frequency of chemical control. Use pesticides only when necessary and only in amounts that will adequately control pests ***(based on scouting results).***

Key Practices on the Use of Agrochemicals

- If used, the choice and application of CPA's must be considered in relation to the IPM strategy and the environment;
- Applications should only be made when ***crop monitoring*** indicates that the ***threshold level*** has been reached;
- The least toxic, least persistent product which is as safe as possible to humans, wildlife and the environment whilst providing effective control of the pest, disease or weed problem must be selected;
- Pesticides should be carefully selected to suit the situation and be compatible with naturally occurring beneficial organisms;
- Pesticides should be specific in target wherever possible and not broad spectrum;
- The use must be minimized in terms of volumes and range through targeted application and spot treatments **(toxicity of CPA's)**;
- Developments that reduce the volume of pesticide should be adopted;
- Environmental damage must be minimized and if possible, avoided.

19. RECORDS OF CPA APPLICATIONS (Criteria C4.10)

Application details for each treatment (including both main crop and seedbeds) should include:

- CPA commercial name and dosage rate
- Date and method of Application
- Name of person who applied the CPA
- Targeted pest(s), disease(s), weed(s), etc.
- Field name and location

The spray record should be completed at the time of application and kept for a minimum of two seasons (or longer is specified by applicable regulations). Pesticide application records should confirm that the CPA manufacturers' instructions have been followed.

20. WATER REDUCTION (Criteria E2.1)

Growers should collect data to show how much water is applied per kg of unprocessed, cured, green tobacco grown and collect data to show how much water is drawn from all relevant sources.

Irrigation

Small gains in efficiency in irrigation would produce significant increases in water available for other uses and reduce risk of surface and groundwater contamination. Consider efficient irrigation systems, the timing of irrigation and the amount of water dispensed etc. Efficient irrigation decreases the energy costs of pumping and providing water for irrigation.

- Prevent losses in distribution systems – use pipes or lining of irrigation canals. Surge irrigation, with larger initial flow, can increase the efficiency;

- Adjust irrigation schemes considering soil texture – irrigation practiced in medium grained and coarse grained soils, sands or sandy loams (which generally have high permeability) make leaching below the root zone a common occurrence;

- Re-use water where possible – runoff from the ends of irrigation furrows may be collected and used as a source of irrigation water for fields at lower elevations. However, sediments and soluble chemicals in the water may make it unsuitable for re-use. In general, higher efficiencies will result in higher quality.

Agricultural Management Practices Which Contribute to Water Source Protection

- Access roads;
- Chiseling and sub soiling;
- Conservation cropping systems (grasses and legumes in rotation);
- Conservation tillage (no-till, strip-till, mulch till, reduced till);
- Contour farming;
- Cover and green manure crops;
- Critical area planting;
- Crop residue use;
- Debris basin (sedimentation basin);
- Diversions;
- Integrated Pest Management (IPM);
- Alternative pest control methods;
- Disposal of pesticide containers;
- Disposal of unused pesticides;
- Prevention of over treatment;
- Prevention of water source contamination;
- Proper application of pesticides;
- Proper cleaning of equipment and disposal of pesticide wash water;
- Proper storage of pesticides;
- Irrigation water management;
- Mulching;
- Nutrient and animal waste management;
- Planned or controlled grazing;
- Sediment and water retention basins;
- Stream bank protection;
- Strip cropping (contour, field)
- Subsurface drains;
- Terraces;
- Vegetative waterways.

21. SOIL CONSERVATION (Criteria E3.1)

When we consider soil management and conservation, we have to think about gaining full production potential in the medium to long term.

Good soil management involves the application of all feasible and available techniques and or best practices, offering the best possible conditions for the plant growth and development and or minimize or avoid possible loss or deterioration.

Sustainability conveys the idea of a balance between human needs and environmental concerns. This concept of sustainability may not in practice be totally achievable, but growers need to pursue its direction.

The relationship of soil productivity to soil degrading process and soil conservation practices is illustrated below:

Soil Degradation Processes		Soil Conservation Practices
• Soil Erosion • Nutrient Runoff • Waterlogging • Desertification • Acidification • Compaction • Crusting • Organic Matter Loss • Salinization • Nutrient Depletion by Leaching • Toxicant Accumulation	- Soil Productivity +	• Conservation Tillage • Crop Rotation • Improved Drainage • Residue Management • Water Conservation Terracing • Contour Farming • Chemical Fertilizers • Organic Fertilizers • Improved Nutrient Cycling • Improved System to Match Soil, Climate and Cultivators

The productivity level of an agricultural soil at any time is a result of the interaction of the degrading process with conservation and or reclamation practices shown in the figure.

In natural ecosystems, productivity and sustainability are achieved through the efficient but delicate balance between all necessary inputs and outputs.

This concept illustrates that the soil productivity of an agricultural system is dynamic. It changes as a result of the relationships between the negative and positive process that occur simultaneously. A truly sustainable cropping system is one in which effects of conservation practices equal or exceed the effects of degrading processes. This concept is equally valid for low-input and high input systems.

It would be virtually impossible to present a standard generic model of “good soil management for tobacco growing”. This is because available technology should be tested for, and adapted to, each particular situation, always taking into consideration:

- Topography (especially in terms of degree, length and form of slopes);
- Type of soil;

- Climate (especially in terms of rain intensity and distribution);
- Agricultural inputs available;
- Socioeconomic status of the grower.

22. WATER SOURCES PROTECTION (Criteria E4.1)

Introduction

Growers should aim to conserve the quality of all water resources around tobacco growing areas, including:

- Surface water bodies (ponds, lakes, reservoirs)
- Water courses (rivers, streams, ditches etc.)
- Underground water sources (wells, boreholes etc.)

Growers must comply with all relevant legislation relating to the conservation of the quality of water resources.

Ground water pollution is relevant to growers because the agricultural use of pesticides and fertilizers is increasingly being cited as a major source of ground water pollution.

Agricultural chemicals have a high potential for polluting surface water through accidents, erosion, irrigation return flow, and runoff. Irrigation back-flow, where chemicals are mixed with the irrigation water, cause serious ground water pollution. Over-application of pesticides can cause excess chemicals to leach or percolate into the water table.

Erosion control can greatly reduce the chances of surface and groundwater pollution as well as preserve soil quality and fertility.

Therefore, soil conservation is the key to efficient water use and to lower economic and environmental costs.

Key Issues

- Minimize fertilizer pollution;
- Minimize agrochemical water pollution;
- Minimize fuel water pollution;
- Maintain and improve crop quality and yield;
- Preserve soil productivity;
- Optimize irrigation water applications.

Key Practices

Fertilizers

The following practices are directed mainly to minimize environmental damage from nitrogen and phosphorus:

a) Soil testing – nutrients should only be applied to soil based on a soil analysis;

b) Follow soil test recommendations – if pH is a limiting factor to nutrient uptake, it should be corrected;

c) Set realistic yield and quality goals – fertilization must be in line with expected tobacco styles, quality and productivity;

d) Choose the most suitable nitrogen source – nitrogen must remain in the root zone long enough for it to be used by the growing crop. Slow release nitrogen fertilizers are often used in crops with irrigation and sandy soils;

e) Apply nitrogen and phosphorus correctly – nitrogen and phosphorus are less likely to be lost by erosion or runoff if they are banded directly into the soil or applied to the surface and promptly incorporated. Surface application of nitrogen and phosphorus is the least desirable method of applying fertilizer;

f) Time nitrogen applications appropriately – the timing of application is more important with nitrogen than with any other nutrient because nitrogen is more mobile. Phosphorus is very stable once it is mixed into the soil. Nitrogen should be applied in split applications that coincide as closely as possible with the uptake pattern of the crop and prevailing rainfall patterns;

g) Control erosion – all nutrients can be lost when the soil is eroded, but phosphorus is especially vulnerable. If no sediments leave the land, little phosphorus is lost:

- Maintain a soil cover – as much as possible maintain rotational crop residues and or cover crops on soil when not in use (trap crop). Where feasible, do not till too early in the season and use no-till methods where possible;

- Manage the soil for maximum water infiltration and storage – maintaining crop residues on soil surfaces increases the soil's water-holding capacity by adding organic matter and maintaining good soil porosity. These goals can be accomplished by using high-residue crops in the rotation and by tilling carefully to prevent soil compaction;

- Maintain vegetation on ditch banks and in drainage channels;

- Field roads should follow the contour or run along the dominant ridge. Seed roads with the permanent grass cover – water erosion and dust from traffic on field roads contributes significantly to soil loss and potential pollution on farms;

- Shape and seed field edges to filter runoff as much as possible. Do not plow to the edge of the field, especially along ditches or canals. Leave buffer strip along drainage ways, and establish a perennial sod.

h) Manage water flow – Erosion is minimised when water flow is slowed or stopped.

- Slow water flow - use contour tillage, diversions, terraces, sediment ponds and other methods to slow or trap runoff. The carrying capacity of running water is directly proportional to the flow rate;

- Discharge pumped or runoff water into filter areas – over 90% of the suspended sediments and nutrients can be removed by this practice;

- Buffer strips – leave buffer areas between farmland and environmentally sensitive areas. Strategically placed buffer strips in the agricultural landscape can effectively mitigate the movement of sediment, nutrients and pesticides within the farm fields and from farm fields. When coupled with appropriate upland treatments, including crop residue management, nutrient management, integrated pest management, winter cover crops and similar management practices and technologies, buffer strips should allow farmers to achieve a measure of economic and environmental sustainability in their operations. Buffer strips can also enhance wildlife habitat and protect biodiversity.

Pesticides

Evaluate the need, method and frequency of chemical control. Use pesticides only when necessary and only in amounts that will adequately control pests (based on scouting results).

a) Identify vulnerability of soil – well-drained or sandy soils low in organic matter have high potential for groundwater contamination;

b) Consider the location of pesticide application in relation to surface water and groundwater. Keeping pesticides away from water sources helps prevent their introduction to groundwater;

c) Be familiar with leaching potential of pesticides – pesticides with a high potential for leaching are more likely to contaminate groundwater. Check pesticide label for warnings about potential to leach groundwater. Pesticides that are relatively stable, highly water-soluble and not absorbed on soil particles have the greatest potential to leach through the soil;

d) Consider the vulnerability of the area – determine the relative susceptibility of the soil to leaching and, to the extent possible, the depth of the water table and the relative permeability of the geological layers between the soil surface and the groundwater;

e) Follow the directions of the pesticide label – many pesticide labels contain use instructions or precautions to avoid groundwater contamination;

f) Apply the pesticide at the appropriate time – fewer applications are required if they are carefully timed relative to stages in the pest's life cycle;

g) Measure pesticides properly and carefully – Avoid using more products that the label directs. Most products will not do a better job of controlling pests and contribute to water contamination;

h) Calibrate and maintain equipment properly – check application equipment regularly for leaks, malfunctions, and calibration accuracy;

i) Avid spills and back siphoning – avoid spills, especially near wells and other water sources. Prevent back siphoning of pesticide-contaminated water into the water source by keeping the end of the hose above the water level in the spray tank. The potential for pesticide contamination is greater for storage, mixing, loading, disposal and equipment-cleaning sites than from the field application;

j) Direct the application to the target site – avoid over spraying the ground and possible drift to reduce the risk of groundwater contamination;

k) Leave buffer zones around sensitive areas – when mixing, applying, storing or disposing pesticides (including cleanup), consider the location of the groundwater-sensitive areas. These include sinkholes, wells and groundwater recharge areas and springs, streams, ponds, wetlands and other surface water. Establishing thick vegetation, such as pasture grasses or leaving an untreated border, are two ways to provide a buffer zone between a pesticide-use or handling site and a sensitive area;

l) Dispose of pesticides properly – triple rinse or pressure rinse pesticide containers and return rinse water to the spray tank. Follow the label for proper disposal of left over pesticides so it does not cause groundwater problems. Buy and mix only the amounts needed. Never dispose of pesticides or pesticide containers near a water source, in sinkholes, in abandoned wells or where there is a shallow water table. Where possible, initiate recycling programmes with Government agencies and chemical companies;

m) Store pesticides safely – store pesticides in their original containers in a cool, well ventilated, protected location away from pumps and water sources;

n) Maintain records of pesticide use. Delay irrigation after pesticide applications, so as to reduce the risk of pesticide reaching the groundwater;

o) Consider weather runoff – runoff should be avoided by not applying immediately prior to heavy or sustained rain and not using an excessive amount of irrigation water. Avoiding runoff will reduce soil erosion and pesticide entry into the surface and ground water;

Use IPM – IPM is a recommended alternative to purely chemical control. IPM uses scientifically sound strategies, such as economic thresholds and pest monitoring, to determine the proper time for pesticide applications.

23. SOIL PROTECTION (Criteria E4.3)

Introduction

In addition to Soil Analysis, soil testing should be completed at least once every five years in all growing areas, with sampling sites comparable over time, to highlight any potential trends in parameters identified to include as a minimum:

- Chemical degradation due to increased levels of salinity
- Accumulation of residual CPAs

Important

- Growers must ensure that all soil protection activities are carried out in line with prevailing legislation

- Soils should be managed judiciously, considering their physical, chemical and biological characteristics and the geoclimatic context where they are inserted;

- Soils should not be regarded as an inert, lifeless, easily renewable substrate;

- Each specific situation requires resorting to and or developing and or adapting soil management and conservation techniques appropriate and available to that situation;

- Soil should be covered and or protected for most of the time in order to prevent losses by erosion and or harmful action of extreme temperatures;

- The system to be adopted for tobacco growing should be the most adequate for the specific situation, however tending towards the No Tillage rules whenever possible;

- Green manure with gramineous and or leguminous plants should be encouraged. However, considering that the main purpose is to protect soil surface, the green mass should not be incorporated but rather lie on the surface after cutting, flattening or desiccated.

- The same area (one piece of cultivated soil) should not grow tobacco crop after crop; there should be a crop rotation. That is to say, tobacco growing on lands should have the areas rotated between crops;

- Setting fire to the soil so as to make cleaning easier, is a practice to be condemned;

- In spite of excessively humid soils not being recommended and or appropriate for tobacco growing, situations exist where technical and planned draining may and should be adopted;

- Growing tobacco in very steeply sloping areas should be avoided mainly because these areas are generally mores suitable for afforestation. However, if these areas are required for tobacco growing, this should be done by Contour Planting and contour lines covered by appropriate species;

- The degree of fertility of the soil is best determined by soil analysis. The data analysis interpretation by a specialist should establish

    a) whether or not a specific soil correction (e.g. acidity) is required,
    b) how much product and or nutrient should be applied and
    c) the way this should be done;

- Avoid soil salinisation that may be caused by irrigation practices;

- The use of organic – plant and or animal – wastes should be encouraged provided that the origin and chemical composition are known, particularly with regard to the presence of heavy metals and or contaminants;

- Accurate use of CPAs to avoid accumulation of residual CPAs in the soil;

Mineral fertilizers should be regarded as soil fertility correction and or plant nutrition products and used as complementary to organic products.

24. MINIMISING ATMOSPHERIC POLLUTION AS A RESULT OF TOBACCO PRODUCTION (Criteria E4.4)

Introduction

Dust and particulate matter (sulphate, nitrates, ammonia, black carbon and mineral dust) can be released into the atmosphere during the combustion of fuels for tobacco curing and the operation of machinery during tobacco production e.g. tractors etc.

Growers should assess the main potential sources of atmospheric pollution from tobacco production in order to implement pollution management and minimise any potential adverse effects.

The following non exhaustive measures should be considered in minimising atmospheric pollution:

- Compliance with all relevant legislation relating to the control of atmospheric pollution;
- Correct design and height of curing barn chimneys;
- Correct installation of filters or abatement technologies in curing barn chimneys;
- Use of cleaner fuels;
- Efficiency of curing barn furnaces, machinery and equipment;
- Avoidance of the open burning of waste (unless it can be demonstrated that this is the most effective and least environmentally damaging option available);
- Avoidance of burning during the preparation of land (unless it can be demonstrated that this is the most effective option, taking into account the impact on the environment).

25. REUSE, RECYCLING AND DISPOSAL OF PLASTICS (EXCLUDING CPA CONTAINERS) (Criteria E5.1)

Growers should reuse, appropriately, materials until the end of their useful life and where possible, participate in recycling programmes.

Overtime, plastic products can undergo changes in physical properties and become unusable due to excessive hardening, softening, cracking or other surface degradation. The changes may be the result of one particular factor or a combination of factors such as oxygen, ozone, light, heat, humidity, oils water or other solvents. The detrimental effects of these factors can be minimised by proper storage conditions.

The most ideal method of disposal of farm plastics is to convert the waste into a useable by-product. Landfilling or burning of farm plastics is not recommended.

26. REUSE, RECYCLING AND DISPOSAL OF SEEDLING TRAYS (Criteria E5.2)

Growers who use seedling trays for tobacco seedling production should ensure that the trays are made from materials that are recyclable. Growers should ensure that where seedling trays are used, that they reuse the trays until they have reached the end of their useful life. The trays should be, where possible recycled and landfilling or burning is not recommended.

When not in use, seedling production trays should be disinfected and stored away under cover to prolong the seedling tray life.

27. REUSE, RECYCLING AND DISPOSAL OF NON-HAZARDOUS WASTE (EXCLUDING PLASTICS AND SEEDLING TRAYS) (Criteria E5.3)

Growers should ensure that they reduce the amount of non-hazardous waste being produced and where possible, reuse materials until they have reached the end of their useful life and where possible use recycling programmes as a means of disposal.

Non-hazardous materials (excluding plastics and seedling trays) includes but is not restricted to paper, metals, hessian, wood and plant material.

Where non-hazardous waste must be disposed of, it should be done responsibly and must meet all regulatory requirements. The burying and/or burning of non-hazardous waste by growers or sending non-hazardous waste to landfill should be avoided unless no other practical solutions exist.

Any hazardous material waste should be segregated from non-hazardous waste.

28. STORAGE, RECYCLING AND DISPOSAL OF HAZARDOUS WASTE (Criteria E5.4)

Waste that is potentially harmful or dangerous to human health or the environment should be considered hazardous be it solid, liquid or gas.

Storage

General requirements for storage include, but are not limited to:

- Waste substances should be stored in a secure area (away from public access) and protected from the elements;
- Storage containers should be in good condition and not leaking;
- Incompatible waste materials should be separated from one another;
- Storage containers should be of a compatible material to avoid corrosion problems or interactions that could lead to container leakages or fires. Non-corrosive storage tanks are recommended for petroleum products and other hazardous liquids;
- Hazardous wastes must be separated from non-hazardous wastes;
- Hazardous recyclables must be separated from non-hazardous recyclables;
- Storage containers shall be appropriately labeled to identify the contents and prevent contamination with a different substance;
- Secondary containment shall be provided for liquid wastes in accordance with legislative requirements.

Storage areas for hazardous waste/recyclables shall be:

- Secure from entry by unauthorised persons;
- Prominently identified as a hazardous waste/recyclable storage area;
- Equipped with suitable equipment to handle emergency situations;
- Provided with personnel who are trained to respond to emergency situations specific to the hazardous waste stored.

Disposal

The preferred option of disposal would be recycling however, if this is not possible the hazardous waste must be disposed of in an environmentally acceptable manner. Where practical, use an appropriate contractor specializing in the recycling and/or disposal of hazardous wastes. Return batteries (wet) to battery suppliers for recycling. Burning and the use of landfills is not recommended.

29. RECYCLING OR DISPOSAL OF EMPTY CPA CONTAINERS (Criteria E5.5)

Disposal of Empty Containers

- Rinse all empty containers at least three times before disposing of the container;
- To avoid the possibility of empty containers being used for other purposes i.e. carriage of drinking water, puncture the container;
- Dispose of empty containers as laid down by local legislation. If this does not exist, or if in doubt, bury the container after first puncturing or breaking them, to prevent further use;
- Providing no specific local legislation exists, small quantities of lightly contaminated combustible containers and packaging may be burnt in an open fire. Remove all stoppers and or bungs and puncture containers before burning. The fire should be supervised and care taken to ensure that smoke does not drift over people, residential areas, livestock or public roads.

30. USE OF RENEWABLE SOIL MEDIUMS FOR SEEDLING PRODUCTION (Criteria E5.6)

When using seedling trays for seedling production, growers should utilise renewable soil medium and should avoid the use of peat.

Examples of renewable soil mediums are:

- Pine bark;
- Sawdust;
- Coconut husk
- Composted green waste.

31. USE OF FUEL FOR TOBACCO CURING

Introduction
The optimization of energy conversion has to be pushed through barn design and insulation, furnace/burners and pipe designs, heat exchange surface and curing technology.

The following types of curing fuels are used:

Wood
Being renewable, cheap and easy to produce, this source of energy is frequently used. When used, the farmer has to be self sufficient through Afforestation programmes.

The use of wood for tobacco curing is the least acceptable by public opinion and cutting native trees is not allowed by a large majority of countries legislation.

Mineral Coal
Cheap and easily transportable supply. Depending on degree of size and uniformity, automatic feeding can be feasible. Not a renewable source.

The resulting ash can be an environmental problem.

Driving Policy
The fuel used for tobacco curing should be the most appropriate for each geological location. Fuel from renewable sources should be used if available and ongoing advances in curing technology should be used to optimize fuel usage and efficiency, reduce labour requirements and protect the grower's health and safety.

Where wood is used for tobacco curing and for barn and or shed construction, farmers must ensure that the wood supply is efficiently managed on a fully sustainable basis and strive to achieve self-sufficiency in the shortest practical period.

Key Issues

- The fuel used for tobacco curing should be the most appropriate for each area;
- The barn design and curing technology should pursue fuel usage efficiency, grower health and safety, minimization of labour and labour hardness, apart from better curing;
- For existing barns, built through old designs, practical feasible modifications should be considered envisaging improved curing efficiency/quality, amount of labour and risk (like barn insulation, use of clamps, dry and wet bulb, venture furnace with door etc.);
- When wood is used for tobacco curing, Northern Tobacco self-sufficiency has to be achieved;
- Northern Tobacco has to adhere to legislation relating to fuel and or wood consumption. Independently of the local legislation Northern Tobacco procedure does not allow the use of wood fuel from native forests;
- Northern Tobacco will execute energy/afforestation surveys and auditing when and where it is considered appropriate.

Key Practices

Curing Technologies
Barn design, fuel feeding automation with increased autonomy, together with automated curing control devices are the most important components for the amount, hardness and security of labour involved in the curing operation. They are also immensely important for cured leaf quality, fuel consumption and cured leaf cost. Northern Tobacco considers the development of technology, which reduces labour, labour hardness and accident risks to be of very high importance.

Barn Design

The old style of very tall barns, over three tiers high, is a good example of increased labour and accident risk. The heating efficiency is also lower than in low barns, due to less exchange surface of shorter pipes. Proper barn and pipe design, good insulation and venture furnace with door are obligatory measures for an efficient fuel usage. When dealing with low, well-insulated barns, the use of dry and wet bulb is a must due to increased curing sensitivity that could cause a higher degree of curing injury (like scorch and "cooked" cured leaf).

For existing barns, built through old designs, practical feasible modifications should be considered envisaging improved curing efficiency/quality, amount of labour and risk (like barn insulation, use of clamps, dry and wet bulb, venture furnace with door etc.).

The setting of the barn is very important and the use of moveable sides to control humidity is essential in achieving good quality curing results.

Labour Rationalisation, Fuel Feeding and Curing Process Automation

Considering the fact that Harvesting and Curing are the most critical phases of the growing cycle, from the point of view of labour intensity and hardness, it is of paramount importance for labour rationalisation. The maximum possible degree of automation should be achieved for each local condition.

Because these two phases are normally the bottle neck of the growing cycle, reducing labour will allow an increased amount of tobacco planted by this specific production unit, thus incrementing field structure productivity and, even more important, augmenting the tobacco volume from the best growers.

During harvesting for example, instead of ten passes per plant, it can be rationalized to six/five passes thus reducing the involved labour (this process is known as "harvesting per block").

The most effective way of labour reduction/rationalisation is by eliminating activities. In curing for example, the use of clips eliminates the activities of tying/stitching and untying.

32. AFFORESTATION

Afforestation offers the opportunity to project a very positive image for Northern Tobacco.

Driving Policy

The fuel used for tobacco curing should be the most appropriate for each geological location. Fuel from renewable sources should be used if available and ongoing advances in curing technology should be used to optimize fuel usage and efficiency, reduce labour requirements and protect the grower's health and safety.

- Where wood is used for tobacco curing and for barn and or shed construction, farmers must ensure that the wood supply is efficiently managed on a fully sustainable basis and strive to achieve self-sufficiency in the shortest practical period.

Key Issues

- Leaf growing projects using wood fuel (for all or part curing and for barn constructions etc.) must have a afforestation programme with the objective of achieving self-sufficiency in wood supply over the shortest realistic time period.

- Independently of being self-sufficient in wood fuel supply or using other kinds of fuel, afforestation programmes should be considered a Global best practice that will cover:
    - The opportunity to improve the image of tobacco growing;
    - Farms domestic needs;
    - Soil conservation;
    - Use of land areas not used for other cultivation.

- Growers are to ensure that all legislation on trees and fuel consumption is adhered to;

- Independently of local legislation, Northern Tobacco strongly discourages the consumption of natural forest trees.

Key Practices

- In estimating self sufficiency, changes in future demand for both tobacco production expansion and competition for alternative usage should be considered;

- Reduce fuel costs and maximize efficiency in wood fuel usage to have a positive impact on grower's cash;

- Afforestation inputs should be treated as a crop input and supplied (as for tobacco) if necessary;

- Choose appropriate species for the site and requirements, and encouraging indigenous planting where possible;

- A seed sourcing methodology must be developed for each project to ensure the optimal viability and integrity of the genetic material;

- Maximise the survival rate and good development of trees;

- Include the planting of fruit, amenity and supplementary trees to encourage local community commitment;

- Liaise with outside parties to combine the use of resources and co-ordination;
- Maximise the success stories publicly whilst setting high but achievable targets.

Statutory Instrument 116 of 2012 (Control of Firewood, Timber and Forest (Produce) Regulations

Section 3(1)(c)

No person-

- Who is a flue-or flame-cured tobacco farmer referred to in section 12(1) shall use or transport firewood for flue or flame-curing tobacco except under the terms of a flu or flame-curing firewood licence obtained in the district where he or she grows.

Section 5

Every flue or flame-cured tobacco farmer who by virtue of section 12(1) is required to obtain a flue or flamed-curing firewood licence, who-

a) on the fixed date, is growing flue or flame-cured tobacco-

   i) shall apply to the appropriate licencing authority for a flu or flame-curing firewood licence; and

   ii) may continue to flu or flame cure his or her tobacco using firewood until his or her application is determined under the regulations;

b) upon expiry of a flue or flame-curing firewood licence, may continue to use firewood for flue or flame-curing his or her tobacco-

   i) between the date of expiry and the date on which he or she lodges his or her application for renewal of the licence, and

   ii) after lodging his or her application for a licence until his or her application is determined in terms of the regulations and, if he or she has lodged an appeal, until his or her appeal is determined.

Section 12

(1) Subject to subsection (2) a flue –or flame-cured tobacco farmer must apply for a flue or flame-curing firewood licence, if he or she-

   a) does not obtain firewood for flue or flame curing of tobacco from a licenced firewood trader; or

   b) does not grow a tobacco farm woodlot or does not use a common tobacco farm woodlot maintained according to the specifications in the regulations; or

   c) does not exclusively use coal or fuel other than firewood to flue or flame cure his or her tobacco.

(2) A flue or flame cured tobacco farmer referred to in subsection (1) shall not be required to obtain a flue or flame-cured tobacco licence if-

   a) he or she establishes a tobacco farm woodlot complying with the following specifications-

      i) the woodlot must consist of a plantation of fast growing trees (that is, whose wood can be sustainably harvested for firewood in five to ten years from the date of establishment of the woodlot;

ii) the woodlot must be planted over a period of five to seven consecutive years at a minimum rate of 0.3 hectare (550 to 850 trees at a spacing of 2m x 2m) for every on hectare of tobacco grown; and

b) the woodlot is either being harvested or not less than five years of age and in course for harvesting within the next two years.

Section 13 of the Statutory Instrument makes provision for the requirements for the Notification required for the intention to dispose of indigenous timber.

33. ON FARM STORAGE

Introduction
On-farm storage is often necessary to hold tobacco from the time it has completed curing, through grading and baling, until it is ready to be marketed. Correct tobacco leaf conditions are required to avoid deterioration in quality and loss of yield. The facility should provide safe and secure storage for the tobacco.

Guiding Principles and Practices
Tobacco for storage should:

- Be stored at the correct moisture and density;
- Be free of any Non-Tobacco Related Materials (NTRM) contamination or infestation;
- Be regularly inspected for infestation; deterioration in quality, and fermentation;
- Not have any agrochemical product applied post harvest;
- Not be over pressed during bailing.

Storage facilities should:

- Be clean, dry and properly ventilated structures that are free of NTRM and constructed of an appropriate material that has not been treated or contaminated by chemicals that could transfer to the tobacco;
- Have doors that are tight fitting and securable;
- Have windows and other openings that are sealable and ventilation openings covered with screen-wire, or other materials, to prevent insect and pest entry;
- Be monitored and inspected for leaks, damage and infestation;
- Not to be used for agrochemical or other products that could contaminate the tobacco;
- Have good site hygiene and sanitation, with the removal of all tobacco scrap and by-products within and surrounding the storage facility area.

Chemical and fumigation controls are generally not recommended for on on-farm storage. This should only be done in accordance with all laws and by specially trained applicators.

34. NON-TOBACCO RELATED MATERIALS (NTRM)/FOREIGN MATTER

Introduction

Appropriate practices should be implemented throughout to promote sanitation and maximise product cleanliness. NTRM is considered to be any visibly detectable material, which is not related to the tobacco plant within the leaf product, which is utilized for the manufacture of tobacco products.

Categorisation

Non-Tobacco Plant Material

Material	Definition	Likely Source
Weed	Plant material from living plants in the field	Field
Straw	Plant material from harvested plants on the farm	Field
Seed	The reproductive product of a plant, whole or part	Field/Farm
Other Plant Material	Other plant material not covered above	Trees

Animal Material

Material	Definition	Likely Source
Animal	Any animal or animal material except feathers	Farm
Insect	Any insect or insect material except cocoons	Farm
Feather	The principal covering of birds, including native or farm bird species	Farm
Cocoon	The silky pupa covering, spun by insect lava	Field/Farm

Mineral Material

Material	Definition	Likely Source
Rock/Stone/Sand (small amounts)	Hardened mineral or earth material occurring in small amounts	Field
Rock/Stone/Sand (large amounts)	Hardened mineral or earth material occurring in large amounts	Field

Man Made Material

Material	Definition	Likely Source
Plastic String	Organic string product of polymerisation	Farm

Plastic Sheet	Organic sheet product of polymerisation	Farm
Other Plastic	Other organic products of polymerisation	Farm
Foam	Semi-rigid or sponge material of an organic nature	Farm/Processing
Rubber	Elastic compounds of varying composition	Farm/Processing
Paper Products	A product made of cellulose pulp derived from wood	Farm/Processing
Metal	Electropositive elements, conductors of electricity	Farm/Processing
Glass	Materials that solidifies from the molten state without crystallisation	Farm/Processing
Hessian	Coarsely woven cloth made of fibres of jute, flex or hemp	Farm/Processing
Wood Products	Wood material cut and dried, derived from trees and shrubs	Field/Farm
Cloth	Fabric or material formed by weaving, knitting or pressing fibre	Farm/Processing
Cotton Strings	Fibre string	Field/Farm
Lint	Clinging bits of fibre, fluff and fuzz	Farm/Processing

On Farm Inspection

Because the farm is the primary source of NTRM, particular attention must be given to ensure that farm environments and practices exist to minimise or eliminate potential sources of NTRM. The most effective way to monitor farm environments and practices is to directly observe them. These observation-based inspections take place on farm where available and applicable by:

- Grower self-inspection
- Agronomists/Field Technician inspections
- Leaf buyer inspections

Each farm should be inspected as often as practical with priority given to new farms and farms with previously documented deficiencies. Inspections should be undertaken so that subsequent inspections on a particular farm occur in different periods of the crop cycle (i.e. field, harvest, curing, baling etc.)

Pre Market Bale Inspection

A pre market bale inspection is an effective tool to use in conjunction with the on farm inspection to preliminarily gauge the overall effectiveness of on farm practices and the suitability of the farm environment. These inspections may minimise costly delays and re-handling expenses.

A sample of bales should be selected and searched using a checklist for documentation purposes. As this is the first stage in the supply chain where particular NTRM materials can be identified, care should be taken to carefully record the findings. The exposed surfaces of the selected bales must be visually searched for signs of NTRM. Dependent on the perceived risk, the bales can also be split to reveal one or more interior surfaces for

searching. Any findings should be documented and the grower informed of the action required.

Any appropriate person involved in the supply chain should undertake the bale inspection process including:

- Grower self-inspection
- Agronomist/Field Technician inspection
- Leaf Buyer inspection

The frequency of pre-market bale inspections should be determined based on the findings of on-farm inspections. Should deficiencies be identified during and on-farm inspection, a greater number of bales from the farm should be searched.

Leaf Purchasing Bale Inspection
During the purchasing process, many quality-related characteristics are assessed through visual inspection. The inspection process should include a qualitative assessment of the inclusion of NTRM. The results of the assessment can be used in a number of ways including:

- As direct feedback to the grower regarding his environment and practices
- As a mechanism to implement more thorough bale searching and NTRM removal protocols
- As a means to return unacceptable product to the farm before entering the processing facility.

A sample of the grower bales should be selected and exposed surfaces of the selected bales are to be visually searched for signs of NTRM. While any area of the entire bale can potentially contain NTRM, care should be taken to examine the leaf butt ends of straight laid or bundled tobacco. Where appropriate, the bales can also be split to reveal one or more interior surfaces for searching. Any findings should be documented on a bale inspection worksheet for delivery to the grower.

Best Practice
The most effect means of eliminating NTRM is to reduce the potential by implementing good preventive measures throughout the leaf supply chain. Self-assessments are an effective tool and should be encouraged at all stages.

Field
- Fields must be maintained in a manner to control weeds and any non-tobacco plant matter;
- Fields should be kept clean of all NTRM.

Transport
- Materials used for the transport of tobacco from the field to the curing facilities should be natural materials and in suitable condition to prevent fraying or breakage;
- Tarps or covers should be of natural materials and in suitable condition to prevent fraying.

Curing Facilities
- Curing barns (walls, floors, ceilings and supports) and surrounding areas should be swept clean'
- Animals and birds, including chickens and wild birds, should be restricted from accessing barns;

- Barn condition should be inspected and loose materials or objects should be secured or removed;
- Ceiling strings, if used, should be of natural material (cotton, jute or hessian) and of sufficient strength to minimise breakage.

Grading and Baling

- Animals and birds, including chickens and wild birds, should be restricted from accessing work areas;
- Grading and baling areas should be swept clean of all NTRM;
- Balers should be inspected and loose materials or objects should be secured, or removed;
- Baling materials and tags should be of natural materials (cotton, hessian, jute, paper based);
- The grading and baling process should include emphasis on NTRM detection and removal.

Storage

- Animals and birds, including chickens and wild birds, should be restricted from accessing barns;
- Tobacco should be stored in areas segregated from other materials, especially fertilizers, chemicals, petroleum products and other farm products;
- Structures should be constructed in a manner to avoid potential insect entry and breeding areas;
- Tarps or covers should be of natural materials and in a suitable condition to prevent fraying;
- Storage areas (walls, floors, ceilings and supports) and surrounding areas should be swept clean;
- NTRM awareness posters should be displayed in high visibility areas.

AGRICULTURAL LABOUR POLICIES

INTRODUCTION

Northern Tobacco (Private) Limited (NT) is committed to ensuring the elimination of child labour and other forms of unfair labour practices and to achieving safe and fair working conditions for all employees on farms where growers are contracted to NT.

OBJECTIVES

The objectives of this policy are to define the labour standards, principles and practices that NT expects all its contracted growers to meet. The policy is based on the standards of the International Labour Organisation (ILO) and the relevant ILO Conventions and as such, the standards, principles and practices must be viewed and implemented in line with these ILO Conventions.

Growers must exercise care and responsibility when applying this policy and must continue to engage with NT to improve agricultural labour practices.

Insofar as children are concerned, the best interest of the child should always be taken into consideration.

CHILD LABOUR

THERE SHALL BE NO CHILD LABOUR

POLICIES

- The recruitment and or employment of child labour is prohibited.

- In terms of Section 11 of the Labour Act [Chapter 28:01], no employer shall employ a person in any occupation:

    - As an apprentice who is under the age of 16 years;
    - Otherwise than as an apprentice who is under the age of 16 years;

- In terms of Section 11 of the Labour Act [Chapter 28:01], no employer shall cause any person under the age of 18 years to ***perform any work which is likely to jeopardise that person's health, safety or morals*** such as:

    - Exposure to physical, psychological or sexual abuse;
    - Working underground, under water, at dangerous heights or in confined spaces;
    - Working with dangerous machinery, equipment and tools or which involves the manual handling or transport of heavy loads:
    - Working in unhealthy environments which may expose them to hazardous substances, agents or processes or temperatures, noise levels or vibrations, which may damage their health;
    - Working under particularly difficult conditions such as working for long hours or during the night or where they are unreasonably confined to the premises of the employer or parent;
    - Having physical contact with wet green tobacco.

- A child between the ages of 16 and 18 years old may assist on his or her family farm provided:

    - The work does not interfere with their education;
    - They are only given safe jobs to do that only involve light work;
    - They are provided with PPE where necessary;
    - A responsible adult is always present and supervising their work;
    - The work includes training;
    - They do not work at night;
    - There is a strict limit on hours spent at work each day and week, so that they have enough time for education, for rest and leisure activities;

- Copies of age documents and school attendance records of all the family children living or otherwise present on the farm should be kept

FORCED LABOUR

THERE SHALL BE NO FORCED LABOUR

Prevention of Bond, Debt and Threat

- Provide workers with written contracts in a language that they can easily understand, specifying their rights with regard to payment of wages, overtime and their right to leave employment;
- Pay workers individually and directly;
- Demonstrate that any debts incurred were voluntary, are not from unreasonably priced goods or service charges, and that workers can repay debts within a reasonable time;
- Keep detailed records for workers that demonstrate that farmers have taken responsibility for the hiring process and have not deducted cost related to the hiring process from worker wages;

Freedom to Leave Employment

- Specify in the worker's contract how quickly and under what conditions workers can leave employment;
- Show that wage payments are up to date;
- Have the financial resources to pay workers the outstanding wages if they want to leave;

Financial Deposits

- Taking deposits from workers cannot be part of the hiring procedure as this directly contributes to a potential condition of forced labour.

Withholding of Payments

- Workers must be paid in line with the provisions of the Labour Act or the relevant Collective Bargaining Agreement;
- The worker should be provided with a letter of employment, which sets out the conditions of employment including the payment of wages;
- Growers must maintain payroll records and issue pay slips indicating what has been paid to workers and the date payment was made.

Retention of Identity Documents and Valuables

- Avoid holding any original identity documents – even when workers are willing to give their original documents. If there is a need for these documents for worker documentation, photocopies should be held instead;

- Only keep valuables or original identity documents on behalf of workers in a way that ensures they are accessible to the worker at all reasonable time.

Prison and Compulsory Labour

- Avoid being involved in prison labour, whether voluntary or involuntary or any other schemes involving compulsory labour.

SAFE WORKING ENVIRONMENT

GROWERS SHALL PROVIDE A SAFE WORKING ENVIRONMENT. ACCOMODATION, WHERE PROVIDED, SHALL BE CLEAN AND MUST MEET BASIC REQUIREMENTS

Safe Environment, Injury and Illness

- Maintain farms in a clean and tidy condition, avoiding any unnecessary hazards such as dangerous tools or materials, poorly stored CPA's etc.;
- Provide suitable quality first aid cover and quick access to first aid kits in all locations on the farm;
- Make all workers aware of first aid providers and how to contact them;
- Have an emergency plan whereby everyone knows what to do in the case of a medical emergency, fire or extreme whether event;
- Maintain records of all major accidents and illnesses on the farm and, if required by law, report them to the authorities;
- Provide, as necessary, in the event of injury or illness on the farm:
    - Transport for workers to receive medical attention;
    - The prompt arrival of medical personnel to attend to the affected worker at the farm;
    - Accommodation where workers are cared for when they are ill.
- Provide adequate training to workers so they understand the potential hazards on the farm and, as far as possible, avoid harm.

Green Tobacco Sickness (GTS)

Green Tobacco Sickness (GTS) is a potential risk to those working with the green tobacco plant. GTS is a form of nicotine poisoning that may be contracted by handling wet green tobacco leaves. The nicotine from the plant mixes with the moisture on the leaves and upon contact, the nicotine is absorbed through the skin, causing acute nicotine poising and its associated symptoms.

Given the potential risk of GTS, pregnant or breastfeeding woman must not be involved in reaping tobacco.

Growers should train and inform workers about GTS preventative measures specifically:

- Informing workers about the causes and symptoms of GTS;
- Ensuring workers wear long-sleeved shirts, gloves and/or raingear to minimise skin exposure to the green plant;
- Advising workers to periodically change wet or tobacco-soaked clothes;
- Limit harvesting work to less than seven hours a day, where possible;
- When possible, restrict work to cooler, drier conditions and avoid fieldwork until leaves have dried after rain;

- Allow workers to take breaks periodically;
- Ensuring the workers wash their hands and body with warm soapy water after working with green tobacco;
- Keep updated training records confirming that the workers involved in topping, reaping and loading barns have received appropriate training on GTS.

Secure Storage of Crop Protection Agents (CPAs)

Crop Protection Agents (CPAs) must be stored in a lockable storage cabinet/cupboard and in a manner that prevents unauthorised access.

- CPAs are stored in accordance with the CPA manufacturers' recommendations;
- CPAs are stored in lockable storage cabinet/cupboard that prevents unauthorised access;
- CPAs are stored in a manner that protects the environment in the event of spillage;
- CPAs are not decanted into containers unless the decanted product is labeled correctly with all the appropriate warnings and directions. Any redundant labels should be removed.

Handling and Use of Crop Protection Agents (CPAs)

- No person under the age of 18, pregnant woman or nursing mothers can handle or apply CPAs;
- Appropriate Personal Protective Equipment (PPE) must be provided to all workers involved in the handling, storage and use of CPAs and they are trained on how to use it appropriately;
- CPAs should only be used in accordance with the manufacturer's written instructions and applicable regulations;
- Only trained workers using PPE should handle or apply CPAs or other hazardous substances. Training should include:
    - The appropriate use of CPAs with respect to dosage, time of application, application method, re-entry, and pre-harvest intervals;
    - Safe storage and handling of CPAs.
- Spraying equipment should be regularly checked and maintained in good condition. Leaking handheld or knapsack sprayers should not be used to apply CPAs.
- Safety training records for handling and use of CPAs should be kept up-to-date;
- Records should be kept for all CPA applications, confirming those who carried out the work.

Re-entry Times after CPA Application

- Be aware of the time interval between the application of any specific CPA to an area or crop and when people can go into that area without PPE;

- The re-entry times set should be effective in protecting people (and animals) against poisoning by CPAs, if the enter a treated area without PPE;

- Re-entry times indicated on CPA manufacturers' labels or product data sheets should be complied with as a minimum;

- Signs (or other known markers), should be posted adjacent to sprayed areas warning people (including workers and members of the public) that spraying has occurred and indicating when it will be safe to enter the field without PPE.

Breaks and Access to Clean Drinking and Washing Water

- Workers should have access to the same quality and quantity of clean drinking and washing water that the grower uses. Water also needs to be available in the fields, curing barns or at home, if the grower provides workers with accommodation.

Accommodation Provided to Workers

Workers accommodation provided by growers should be:

- At least comparable to expected living standards in the region;

- Equipped with toilet facilities;

- Equipped with adequate heat or ventilation depending on the climate;

- Provided with reasonable quantity of personal space;

- A safe distance from fields or other areas where potentially hazardous substances such as CPAs are applied or stored.

FAIR TREATMENT

GROWERS SHALL ENSURE FAIR TREATMENT OF WORKERS AND THEIR FAMILIES THERE SHALL BE NO HARASSMENT, DISCRIMINATION OR ABUSE OF ANY NATURE

Physical Abuse and Intimidation

The grower determines the working atmosphere on the farm and should set an example and not use physical force against workers and their families. Neither should the managers on farms. This means that nobody should:

- Be beaten by hand or with an object;
- Work in excessive heat or cold;
- Be refused breaks to eat, drink or use sanitary facilities within reason;
- Be incarcerated (be restrained or locked up)

Threatening this kind of punishment is equally unacceptable.

Verbal Abuse and Harassment

The grower should ensure:

- No continuous and systematic pressure on an individual or group of workers and their families in order to demean them and make them afraid;
- To stop anybody who is constantly insulting, humiliating or shouting abuse at workers and their families;
- Action taken against verbal abuse and harassment and, if circumstances warrant this, discipline and dismissal of persistent offenders will follow;
- A clear policy against verbal abuse and harassment that is known to managers, workers and their families.

Discrimination

Workers should be hired only on the basis of their experience and ability to perform the required tasks. There should be no discrimination against specific workers when assigning tasks, applying sanctions, giving rewards or dismissing workers.

There should be no discrimination on the basis of:

- Race, colour or social origin;
- Gender;
- Religion;
- Political Affiliation;
- Union membership or status as a worker representative;
- Ethnicity, citizenship or nationality;
- Pregnancy;

- Disability;
- Sexual orientation.

Support Mechanism

The best solution is for workers to bring their grievances directly to growers with an expectation that appropriate action will be taken without fear of reprisal.

On larger farms, some approaches that could be used are:

- Weekly or monthly meetings with workers or their representatives;
- Complaint boxes for farm workers to use anonymously if the choose.

Freedom of Association

- Grower policies and contracts with workers do not restrict rights to Freedom of Association, e.g. workers can decide themselves to join or not to join unions or other organizations of their choice;

- Upon hiring, workers are not asked about their union affiliation;

- There are active worker representatives on the farm chosen by other workers;

- Growers negotiate terms and conditions of work with the workers' representative if there is a union or association;

- Growers never discipline or terminate a worker's contract for union or worker association activity;

- Workers are not promoted, demoted or transferred based on such affiliations;

- Growers do not pressure workers to join one organisation or another.

Workers' Right to Freedom of Association

Workers should within reason, be allowed to gather freely to talk about work and to discuss forming or joining a union or other topic. Growers must not dismiss, move workers to a harsher job as punishment, or otherwise discipline workers for such activities.

Collective Bargaining

Workers are free to form or join unions or any other representative organisations of their choice, and negotiating their terms and conditions as a group.

Farm Workers' Representatives

Workers may want to have worker representatives and they may want to choose some of their fellow workers to talk about the terms of their employment. Growers must, within reason, accommodate the workers' freedom to choose their own representatives. If workers, a union, or worker representatives want to talk to the famer about the terms of their jobs, growers should discuss or negotiate in good faith.

INCOME, WORK HOURS AND BENEFITS FOR FARM WORKERS

WORKERS SHALL NOT WORK EXCESSIVE HOURS AND MUST BE PAID THEIR WAGES IN ACCORDANCE WITH COLLECTIVE BARGAINING AGREEMENTS

Working Hours

- Growers shall ensure that workers work hours in compliance with the appropriate Collective Bargaining Agreement;
- Growers should ensure that the workers employment contract should clearly state the number of hours that they expect them to work each week;
- Growers must keep time records for each worker;

Wages

- Growers shall pay workers wages as provided for in the appropriate Collective Bargaining Agreement;
- Growers should have documents showing each payment to the worker (e.g. employee signature on a pay slip, a bank transfer slip, or another written wage receipt system). Workers should sign, or receive copies of pay slips.

Regularity of Payment

- Growers should have regular paydays. Workers should be paid at least once per month and at minimum, in line with the provisions of the Collective Bargaining Agreement;
- Growers should inform their workers about the timing of their paydays when employing them.

Benefits, Holidays and Leave

- Growers must ensure compliance with the provisions of the appropriate Collective Bargaining Agreement in respect of leave, public holidays and other benefits;
- Growers must ensure that the workers employment contract makes reference to leave, public holidays and other benefits that the worker may be entitled to.

Overtime Work

- Growers shall ensure that that whenever they require workers to work overtime that the work is voluntary;
- Growers shall ensure that where overtime is worked, the overtime wages are paid in accordance with the provisions of the appropriate Collective Bargaining Agreement;

COMPLIANCE WITH THE LAW

GROWERS MUST ENSURE THAT THEY ARE COMPLIANT WITH THE COUNTRY'S LABOUR LAWS

Farm Workers Legal Rights

- Workers must be informed of and understand their conditions of employment when they commence work with the grower;

Written Contracts for Farm Workers and Employee Records

- Growers and workers must have entered into a written employment contract and workers must receive a copy of the contract;

Terms and Conditions of Employment

- Terms and conditions of employment contracts must be in accordance with the country's labour laws.

COMMUNITY AND TRADITIONAL RIGHTS

THE RIGHTS OF COMMUNITIES AND TRADITIONAL PEOPLES TO MAINTAIN ACCESS TO LAND AND NATURAL RESOURCES IS RECOGNISED

- The right of growers to use the land on which the operate can be demonstrated and it is not legitimately contested by local communities and demonstrable rights;
- The rights of communities and traditional peoples to access land and natural resources in the vicinity of farms are recognized and safeguarded;
- All land acquisitions made by growers respect the rights of individuals and communities impacted;
- Wherever possible, growers maintain positive relations with the communities in which the operate;
- Wherever possible, farmers provide support for economic development of the community in which they operate.