Recommended levels of inspection before harvest
A minimum of three inspections are required.

**Stage 1:** 45 days after planting to verify isolation, detect volunteer plants, and check for designated diseases.

**Stage 2:** 100 days after planting-verify off types, detect designated diseases and pests. This may coincide with first harvesting.

**Stage 3:** 15 days before harvesting of seed canes to verify off types, detect designated diseases and pests.

**Maximum permissible limits at various stages**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Stage of field inspection</th>
<th>Max. permissible limits % foundation</th>
<th>Max. permissible limits % certified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off types</td>
<td>I, II &amp; III</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Smut</td>
<td>I</td>
<td>0.02</td>
<td>0.1</td>
</tr>
<tr>
<td>Napier stunt*</td>
<td>II</td>
<td>0.05</td>
<td>0.5</td>
</tr>
<tr>
<td>Top borer</td>
<td>II &amp; III</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Stalk borer</td>
<td>III</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>


Leaflet supported and funded by KARI, MoA and MoLD with funds from world bank through East African Agricultural productivity Project (EAAPP)

December, 2012
Introduction
For many years Napier grass has been grown from canes and root splits without serious challenges from pests. However, the emergency of Napier stunt and smut diseases which are spread through planting materials has posed a major threat to forage production on smallholder farms.

Although the spread is extremely fast through exchange of planting materials, there are no clear seed production and distribution guidelines to enhance disease management.

Importance of seed production guidelines
- To maintain and make available to the public high quality seed material.
- To distribute to farmers genetically pure disease and insect pest free seed material.

Stages of producing genetically pure seed material free from disease and pests to minimize disease occurrence/spread are as follows:

Primary seed production
This is breeders or foundation seed on scientifically supervised farms usually on research station or seed from well maintained nurseries. Main issues addressed are to ensure purity of the variety, plant vigour and elimination of diseases and insect pests.

Steps to follow in primary seed production

**Step 1:**
- Get breeders seed from a known clean source (tissue culture plantlets).
- If not sure of the cleanliness of the breeders seed, do a hot water treatment.
  1. Boil water to 52°C (the melting point of a candle is 52°C).
  2. Put off the fire and immerse the planting material into the water until it cools to room temperature.

**Step 2:**
- Plant in well prepared field where Napier has not been planted previously and away from old Napier fields.

**Step 3:**
- Keep the field clean by regularly weeding.

**Step 4:**
- Inspect the field regularly during growing season-checking for diseases, pests & off types.
- Remove all diseased plants/infested with insects and those that are less vigorous.
- Recommended seed fields should have less than 0.1% infection of Napier smut, stunt, and other diseases and off types.

**Step 5:**
- Harvest at 16-28 weeks old for good Napier seed.
- Avoid too old seed crop as the buds will not sprout.

**Secondary seed production**
- Is usually sourced from the primary seed multiplication as indicated earlier.
- Is mainly carried out on large farms or Agricultural Training Centres (ATCs).
- Issues addressed are purity of crop varieties and elimination/avoidance of pests.

Steps to be followed in secondary seed production

**Step 1:**
Get breeders seed from primary multiplication farms. Materials may be soaked in fungicides solution (0.1% MBC-Benomyl/thiophanate-methyl) for 5-10 minutes to eliminate minor fungal infestations and insect pests where necessary.

Follow steps 2, 3, 4, 5, 6 and 7 as in primary seed multiplication.

Secondary seed field can be used up to 3rd ratoon depending on the inspection report.

Involve an expert if seed is for distribution to other regions

Tertiary seed production
Mainly done on farms for seed and feed production.

Seed sourced from secondary seed multiplication sites.

Planting is done in well prepared fields where Napier has not been planted previously and away from old Napier fields.

Inspect the fields regularly during the growing season and remove all diseased plants, those infested with insects, those that are less vigorous.

Always involve an expert if seed is for distribution to other regions.