

## Appendix 3 Tools

There follows some examples of training and awareness 'tools' produced during the course of the Regional Coffee Wilt Programme (RCWP).



**Coffee Wilt Disease Field Management Guide**

It is therefore recommended that fertiliser at the rate of 75g per tree per season for young coffee and 250g per tree per season for coffee trees that are more than two years old. Organic manure at the rate of 20kg per tree can remain effective for 2 years without further addition of the manure.

**Pruning and stumping:**  
Pruning is an essential component of coffee farming. It is necessary to remove excess or unwanted branches, dry branches, rejuvenate the tree and to maintain desirable canopy for ease of picking and pest/disease control. When pruning:-

- Use clean tools (pruning saws, secateur) as disease can be passed onto healthy plants through contaminated tools. Passing them through flame or use of alcohol or Jik if available can clean the tools.
- Tools should be cleaned after pruning each tree before starting another tree.
- Ensure that you start pruning healthy vigorous looking trees first. When these are finished, then you can start on infected or suspicious looking trees.
- Remember in all cases to clean the tools before you move to the next tree.
- When stumping, make sure that you make slanting cuts, which will not allow rain water to stay on the wounds and encourage disease to develop.


**Pruning Woundpasted with copper oxychloride**

**Harvesting:**  
It is recommended that coffee should not be picked from CWD infected trees. The disease would have arrested the expansion and proper maturation of these beans. Such beans would reduce quality of coffee and likely to increase materials with the disease in the husks.


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Flat cutting  
Slanting cut

Logos: FAO, ICRRAF, IITA, International Coffee Organization, Gb, EU




**When the bark is peeled off, black/brown or violet stripes are seen on the wood.**



**An affected and dried up coffee plant remain firmly rooted in the ground.**


## Coffee Wilt Disease Prepared for Primary Schools



**At advanced stages, cracks often occur around the stems of affected plants.**

**How does the disease spread?**

- By wind and rain water/run-off,
- Movement of infected stems from farm to other areas as firewood,
- Movement of infected seedlings and soil,
- Use of tools (pruning saws, pangas, hoes) contaminated with the fungus.




**How can we control Coffee Wilt Disease?**

- Up-root and burn all infected plants.
- Do not move infected stems and soil around the farm or to other farms.
- Clean tools by heating the metal parts in flames or fire.
- Get seedlings for planting from nurseries that practice good hygiene.

● **Contact your local agriculture staff for advice when you see the signs shown earlier.**

**Acknowledgement**  
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**Infected plants do not recover even after pruning. When pruned or stumped, any suckers that may sprout later will wilt and dry up.**

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**Infected plants do not recover even after pruning and/or stumping. When pruned or stumped, any suckers that may sprout later will wilt and dry up.**

## Coffee Wilt Disease Prepared for Higher Education Institutions

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**An affected and dried up coffee plant remains firmly rooted in the ground, unlike plants affected with other fungi, which easily topple over when pushed**

- Movement and/or use of infected coffee husks (as mulch) and dried plants (as firewood).
- Use of contaminated tools such as hoes, pangas, slashers and secateurs which have been used in infected fields.

**Disease control:**  
 Control measures currently in use aim at reducing disease spread and destruction of inoculum through the following means:-

1. Inspecting fields regularly to identify coffee trees with disease symptoms,
2. Destroying infected coffee trees on site by chopping, uprooting and burning the whole plant,
3. Do not plant immediately, allow 12-24 months before replanting to allow disease in soil to decline,
4. Avoid transporting infected coffee plant materials and soil around the farm, to other farms or villages,
5. Sterilizing garden tools used in infected fields by flaming the metal parts over the fire,
6. Remove soil and clean tools well followed by flaming as in (5) before using them in a fresh field,
7. Purchasing seedlings/cuttings from reputable coffee nurseries. Do not use seedlings uprooted from forests. They could be infected,
8. Avoid wounding coffee trees during weeding/hoeing, slashing or through tethering livestock (goats, sheep, cattle, pigs) on coffee trees. Open wounds provide easy entry into the plant tissues,


9. **Contact your local agriculture staff for advice when you see the signs shown earlier.**


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**Transmission and spread:**  
 Fusarium xylarioides has limited persistence in soil up to about 6 months. Its spores enter the plant through wounds or cracks on the stems just above ground level or the root system. The disease can be spread by:-

- Wind and running water. Spores from the stem are washed by rain and move in rain water from one plant to another,
- Dragging infected dead trees through the field for use as firewood, fencing or staking of other crops,
- Movement of infected soil or planting materials,
- Human beings through handling crops in field from infected to healthy plants.





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## DO YOU KNOW COFFEE WILT DISEASE (CWD)?

- Work on healthy part of field first and last in affected part.
- Uproot and burn affected plants on spot.
- Avoiding wounding trees during weeding using pangas, hoes, tethering animals.
- Observe good crop management to the remaining crop e.g. apply manure / fertiliser and mulching as required.
- Plant other crops eg. beans, maize for at least 2 years before replanting with coffee.
- Avoid harvest from diseased trees.






**For further advice contact your local agriculture staff immediately**

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## KNOW COFFEE WILT DISEASE

A devastating disease which kills arabica & robusta coffee

An example of an infected coffee tree being uprooted and cut, ready to be burnt

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**For further information contact**  
**The Coordinator, RCWP**  
**CAB International – Africa Regional Centre**  
**P.O. Box 633 00621, Nairobi, Kenya**







Avoid using stems of a coffee tree killed by CWD for fencing coffee.

# Coffee Wilt Disease (Tracheomycosis)

## A major disease of Coffee in Eastern and Central Africa


### How to avoid CWD

Prevent any kind of tree wounding eg:


- When slashing to control weeds
- When hoeing to control weeds
- When working fertiliser or manure around feeder roots
- When grazing animals around coffee trees – goats do eat the bark of coffee stems

Avoiding use of coffee wilt disease infected trees eg:

- As fencing or staking
- As fire wood




Coffee farm destroyed by Coffee Wilt Disease (CWD)...




Legend


- Surveyed - CWD present
- Not Surveyed
- Surveyed - No Wilt




Infected coffee trees used for fencing.



A coffee stem with wounds (arrows) caused when slashing.



If bark is scraped close to the bottom of the stem – a blue black staining or discoloration is seen.




Infected coffee tree stems being carried for use as firewood.

### For healthy coffee trees and fields

Give your coffee trees adequate nutrition through applying:

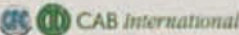


- Inorganic fertiliser
- Manure
- Mulch to conserve moisture and soil nutrients

Timely uprooting and burning of newly CWD infected coffee trees.



Timely uprooting and burning any CWD infected coffee trees.

This leaflet is an output from the Regional Coffee Wilt Programmes funded by the Common Fund for Commodities (Project CFC/ACD/13).

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# Coffee Wilt Disease

## A major disease of Robusta coffee in Uganda

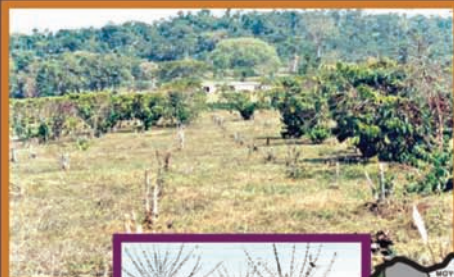
### How to avoid CWD

Prevent any kind of tree wounding eg:

- When slashing to control weeds
- When hoeing to control weeds
- When working fertiliser or manure around feeder roots
- When grazing animals around coffee trees - goats do eat the bark of coffee stems

Avoiding use of coffee wilt disease infected trees eg:

- As fencing or staking
- As firewood



Coffee farm destroyed by Coffee Wilt Disease (CWD).



Coffee tree killed by Coffee Wilt Disease (CWD)



Key:  
 0-5% = low  
 >5-20% = medium  
 >20% = high



Infected coffee trees used for fencing



Infected coffee tree stems carried for use as firewood



A coffee stem with wounds (arrows) caused when slashing



If bark is scraped close to the bottom of the stem - a blue black staining or discoloration is seen

### For healthy coffee trees and fields

Give your coffee trees adequate nutrition through applying:

- Inorganic fertiliser
- Manure
- Mulch to conserve moisture and soil nutrients



Sterilize garden tools and timely uproot and burn any CWD infected coffee tree

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