Sweet Potato Ridge ( )

Earth embankment formed by digging a channel and pile the soil to form a ridge on which potato is planted.

Sweet potato ridge are constructed from the soil dug out of the furrow. Farmers make the furrow and ridge by dengora and a hoe. In some cases oxen scoop are used to move the soil and form the embankment. Sweet potato is planted by cuttings. It is often planted during the end of the main rainy season. There are different methods employed in making ridge and furrows. The furrows are meant to collect rain water and the cuttings of sweet potato planted on the ridge. The plant benefits from the soil water stored by the farrows. It has deep roots that go deep insearch of soil water. Water could also move up by capillary movement. Forming the ridges and basin is quite labours. The ridges are frequently made new and in some cases the former ridges and furrows are maintained. The technology suits to sub-humid and semi arid agro-ecological zones having sandy loam soils.

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: (approx. 100-1,000 2)

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: 50 ( )

(> 50)

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: - , - , - , / - , Chat (khat, shrub)

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: 1

/ Tree types: Acacia species

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- Wt:

- Cn:
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SLM SLM

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- (
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Oromia

Technical knowledge required for field staff / advisors: moderate

Technical knowledge required for land users: moderate

Main technical functions: increase of infiltration, increase / maintain water stored in soil, water harvesting / increase water supply

Secondary technical functions: control of dispersed runoff: retain / trap, reduction of slope length, increase in soil fertility

Better crop cover
Material/ species: Sweet potato
Quantity/ density: 20000-2500
Remarks: along the contour

Mixed cropping / intercropping
Material/ species: maize, sorghum, chat
Remarks: row and broadcast

Contour planting / strip cropping
Material/ species: Sorghum, chat

Cover cropping
Material/ species: Sorghum, chat, maize

Green manure
Material/ species: Sweet potato

Aligned: -contour
Vegetative material: T : trees / shrubs, F : fruit trees / shrubs, C : perennial crops
Number of plants per (ha): 1500
Vertical interval between rows / strips / blocks (m): 0.2
Spacing between rows / strips / blocks (m): 2.5
Vertical interval within rows / strips / blocks (m): 2
Width within rows / strips / blocks (m): 2.5

Trees/ shrubs species: some accacia trees

Fruit trees / shrubs species: apple, mango

Perennial crops species: chat

Slope (which determines the spacing indicated above): 3.00%

If the original slope has changed as a result of the Technology, the slope today is (see figure below): 3.00%

Gradient along the rows / strips: 0.00%

Retention/infiltration ditch/pit, sediment/sand trap
Spacing between structures (m): 1.5-2
Depth of ditches/pits/dams (m): 0.2-0.5
Width of ditches/pits/dams (m): 0.5-1
Length of ditches/pits/dams (m): 50-70

Structural measure: Ridge and furrows
Spacing between structures (m): 2-3
Height of bunds/banks/others (m): 0.3-0.6
Width of bunds/banks/others (m): 0.51
Length of bunds/banks/others (m): 50-70

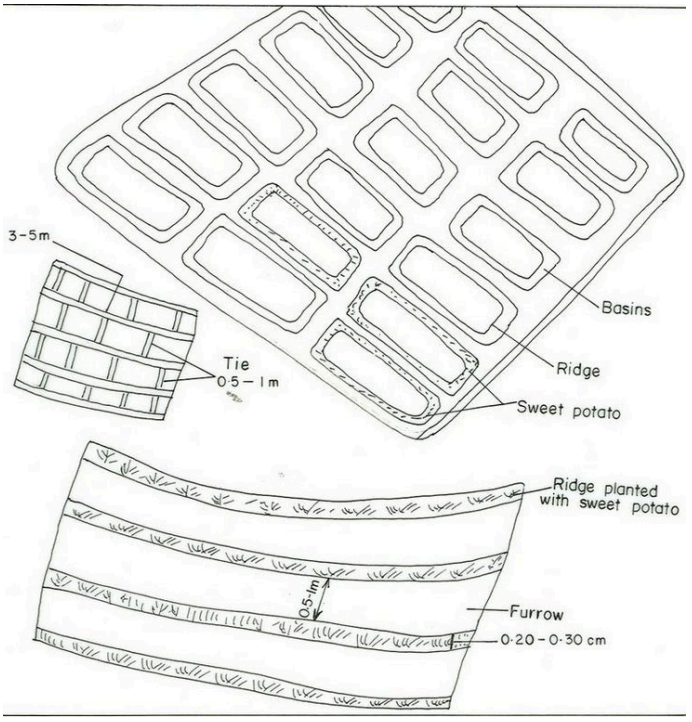
Construction material (earth): Soil dug is embanked to form the ridge

Slope (which determines the spacing indicated above): 3%

If the original slope has changed as a result of the Technology, the slope today is: 3%

Lateral gradient along the structure: 0%

For water harvesting: the ratio between the area where the harvested water is applied and the total area from which water is collected is: 1:1



- **Birr**
- ( ) 1 USD = 8.6 Birr
- 0.81

Soil dryness and texture-light soils are very simple for opration and the least cost is incurred. Loam soils are good soils with moderate cost of investment.

1. Seed bed preparation (/ : dry season)
2. Pitting (/ : after rain)
3. Manuring (/ : all season)
4. Planting (/ : during rains)
5. Cultivation (/ : during rains)
6. Excavation (furrow formation) (/ : dry period)
7. Embankment (ridge forming) (/ : None)
8. Planting sweet potato (/ : rainy season)

			(Birr)	(Birr)	%
Labour	ha	1,0	73,0	73,0	100,0
Animal traction	ha	1,0	35,0	35,0	100,0
Seedlings	ha	1,0	25,0	25,0	100,0
Compost/manure	ha	1,0	50,0	50,0	100,0
				183.0	
				21.28	

1. Tillage (/ : dry season / each cropping season)
2. Harrowing (/ : dry season / each cropping season)
3. Contour ridging (/ : dry season / each cropping season)
4. Planting (/ : rainy season / each cropping season)
5. Cultivation (/ : rainy season / 2-3)
6. Reconstructing basins, ridges and tie (/ : dry eason /)
7. Applying more manure (/ : all season /)
8. Repair of ridges and furrows (/ : before planting/1)
9. Placing of fertile soil on the ridges (/ : before planting/2)
10. Applying manure during cultivation (/ : after planting/1)

- [ ] < 250
- [ ] 251-500
- [x] 501-750
- [x] 751-1,000
- [ ] 1,001-1,500
- [ ] 1,501-2,000
- [ ] 2,001-3,000
- [ ] 3,001-4,000
- [ ] > 4,000

- [ ]
- [x]
- [x]

- [x] (0-2%)
- [ ] (3-5%)
- [ ] (6-10%)
- [ ] (11-15%)
- [ ] (16-30%)
- [ ] (31-60%)
- [ ] (>60%)

- [x]
- [ ]
- [ ]
- [ ]
- [ ]
- [x]

- [ ] 0-100
- [ ] 101-500
- [ ] 501-1,000
- [x] 1,001-1,500
- [ ] 1,501-2,000
- [ ] 2,001-2,500
- [ ] 2,501-3,000
- [ ] 3,001-4,000
- [ ] > 4,000

- [ ]
- [ ]
- [ ]

- [ ] (0-20)
- [ ] (21-50)
- [x] / ( )

( )

- [ ] / ( )

(> 20)

- [ ] (>3%)

(51-80)
(81-120)
(> 120)

(,)
/ ( )

(,)
/ ( )

(1-3%)
(<1%)

(
)
?
/

< 5
5-50
> 50

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( )

( )

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SLM

( )
(/
)
/

10%
10-50%
50%

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(,
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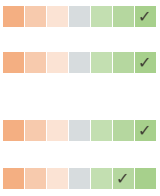
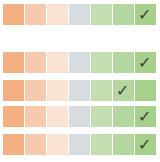
( )
( )
( )
( )

< 0.5
0.5-1
1-2
2-5
5-15
15-50
50-100
100-500
500-1,000
1,000-10,000
> 10,000



sweet potato leaves are used for fodder

sweet potato leaves are used for fodder



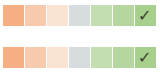
SLM: 50
SLM: 0

Soil fertility

decreased

increased

(
)



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/
1-10%
11-50%
> 50%

?
0-10%
11-50%
51-90%
91-100%

?
/

?
/
( )

:
- Improve production

  How can they be sustained / enhanced? Use of high yielding varieties and fertilizers
- Reduces risk of crop failure

  How can they be sustained / enhanced? Encourage more crop type

:
- Efficiently controls soil erosion

  How can they be sustained / enhanced? The ridges retard surface flow and the furrow provide space for rain water storage
- Allows maximum storage of rain water
- Improves water storage capacity of soils

  How can they be sustained / enhanced? Sweet potato improves the soil structure by initiating microbial activities
- Reduces evapotranspiration rate of soil moisture

  How can they be sustained / enhanced? Sweet potato provide dense ground cover and hence reduce evapotranspiration losses
- Improves soil fertility

  How can they be sustained / enhanced? Sweet potato is naturally a soil fertility enhancing crop.

/ / :

/ / :

Editors

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: 30 2011 : 4 2019

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https://qcat.wocat.net/km/wocat/technologies/view/technologies_1068/

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- Food and Agriculture Organization of the United Nations (FAO) -
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