



Rwanda Agronomy: Mulching lesson plan

TOTAL TIME: 1hours 20 minutes

AUDIENCE: lead Farmers, Field officers and Cooperative staff

FACILITATOR: Farmer Trainer

LOCATION: Training plot and classroom

OBJECTIVES:

- **Objective 1:** Define mulching and recognize which materials can be used for mulching
- **Objective 2:** Recognize the benefits of mulching.
- **Objective 3:** Identify when to mulch and demonstrate where and how to mulch.

MATERIALS FOR MULCHING:

- Samples of good and bad mulching materials. Good: Grasses, sorghum stalks, Maize stalks, Bean stalks, Banana stems, Bad: Plastic bags, plastic, seeding weeds etc.

TIME	CONTENT OUTLINE
10 min	<p>OPENING:</p> <ul style="list-style-type: none">▪ Introduction▪ Logistics▪ Review Objectives <p>Objective: This month we will learn about Mulching.</p> <ul style="list-style-type: none">• We will explain what mulching is and demonstrate the appropriate materials used for mulching.• We will explain the importance of mulching.• We will demonstrate how to mulch, where to mulch, and the appropriate time for mulching. <div style="border: 1px solid black; background-color: #f0d0d0; padding: 5px;"><p>ACTIVITY: Icebreaker</p><ul style="list-style-type: none">a) Choose an icebreaker that is appropriate for your audience.</div>



	<p>OBJECTIVE 1: Define mulching and recognize which materials can be used for mulching</p> <p>ASK: What is mulching?</p> <p><i>Trainer’s note: Discuss the responses with participants.</i></p> <p>ANSWER: Mulching is the practice of covering the soil using organic materials that decompose over time.</p> <p>ASK: What materials can be used for mulching?</p> <p>ACTIVITY: Identify mulching materials.</p> <p>ANSWERS:</p> <ul style="list-style-type: none">• Good mulch materials: Dry grass, sorghum stalks, maize stalks, dry leaves, coffee husks, crop residues, and other organic materials.• Poor mulch materials: Old plastic materials, old clothes, sacks, fresh green weeds that can regrow, and similar materials. <p>Good mulch consists of materials that can be piled and decompose without sprouting again or creating additional weed problems.</p> <div data-bbox="386 1241 1365 1423" style="border: 1px solid black; padding: 5px;"><p>ACTIVITY: Mulching Materials</p><p>a) Display each mulching material one by one and ask the farmers whether the material is suitable for mulching coffee</p></div>
25 min	<p>OBJECTIVE 2: Recognize the benefits of mulching.</p> <p>ASK: What are the benefits of mulching?</p> <p>ANSWER: There are many!</p> <ul style="list-style-type: none">• Retention of soil moisture. Prevents water loss through evaporation. Very important in the dry weather; protect feeder roots. Very important if you don’t have shade!• Prevention of soil erosion. Protects the soil from rain drops which



	<p>dislodge soil particles and then runoff.</p> <ul style="list-style-type: none">• Improves water infiltration into the soil, without runoff, since rainfall passes through the mulch slowly.• Maintenance of soil fertility through high organic material inputs. As mulch decomposes it improves soil structure.• Suppression of weed species. (Note to trainer: <i>Refer Farmers back to the methods of weed control discussed earlier</i>)• Regulation of soil temperature. Keeps soil cool in the hot weather and warm in cold weather – protecting feeder roots.
<p>40 min</p>	<p>Objective 3: Identify when to mulch and demonstrate where and how to mulch</p> <p>ASK: When is the best time to mulch? Why?</p> <p><i>Note to Trainer: Brainstorm the best time to mulch with participants based on rainfall pattern.</i></p> <p>ANSWER:</p> <ul style="list-style-type: none">• After weeding.• Towards the end of the rains before the soil dries out, at this time, there should be mulching materials readily available.• Mulch at this time to prevent moisture loss.• In Rwanda this is May/early June. <p>ASK: Where should we mulch? How should we mulch?</p> <p>ANSWER:</p> <ul style="list-style-type: none">• If you have a little mulch: Just mulch under the canopy of each tree, this is where the feeder roots are.• If you have lots of mulch: Mulch everywhere. This is the best method to control weeds as well as protect the roots. <p>ILLUSTRATION: Show photos of full-mulch and under canopy mulch</p>



Half mulched



Full mulched

ACTIVITY: Mulching: *Note to Trainer: The participants will carry out under canopy or full mulching for the activity depending on how much mulch is available at the demonstration site.*

At the demonstrate plot demonstrate under canopy and/or full mulching:

- a) After the demonstration split the participants into groups of 5.
- b) Divide the 40 trees evenly among the groups.
- c) Ask each group to mulch their assigned section of trees.
- d) Visit each group and give feedback throughout the activity.
- e) Bring the groups back and discuss your observations (what went well, what was challenging).

UNDER CANOPY MULCHING

- Make sure the area is cleanly weeded (hand weed)
- Select one of the 40 trees to mulch where everyone can see clearly
- Prepare mulching materials (cut if they are too bulky)

	<ul style="list-style-type: none"> ○ Mulch under the drip line, minimum 4 cm thick ○ Make sure the mulch does not touch the trunk. There should be a 10 cm gap. Explain this is to keep the termites away. <p>✚ Note: While experiencing mulching material scarcity, leguminous cover crop can serve as mulching too.</p>  <p>FULL MULCHING</p> <ul style="list-style-type: none"> ○ Follow steps above, but mulch under and between the trees ○ If you are on a slope and full mulching remember it is important to place the mulch across the slope. <i>Note to Trainer: If not demonstrating this technique draws a diagram on the white board illustrating how to apply mulch on a slope.</i>
<p>10 min</p>	<p>CLOSING:</p> <div style="border: 1px solid black; background-color: #f0e6e6; padding: 10px; margin: 10px 0;"> <p>ACTIVITY: Knowledge Check Ask participants the following questions:</p> <ul style="list-style-type: none"> ● What are some of the benefits of mulching? ● When is the best time to mulch? ● If you only have a small amount of mulch, how would use it? ● How will you mulch if you have a lot of mulch? </div> <p>▪ Next steps Immediately go to Record keeping lesson plan and Review objects.</p>