

Theme 4: Water management and supply

WATER SOURCES, DISTRIBUTION, STORAGE AND REQUIREMENTS (Level 1)

Topic	Training & information Content
4.1	Water sources, distribution, storage and requirements



1. You will learn about (learning objectives):

- Identify appropriate sources of clean water for cows
- Importance of water to the cow
- Qualities of good water
- Water distribution
- Water storage



2. Uses of water by a cow

- Water is a very important to cows and should be given free access
- Water is needed for:
 - production of milk (milk is 87% water)
 - transportation of absorbed nutrients
 - aids chemical reactions within the body
 - body temperature maintenance
 - excretion of waste



3. Qualities of good water

- Water qualities aspects include:
 - Clean
 - Good smell
 - Good colour
 - Free of impurities
 - Have naturally occurring minerals in right quantities
 - Have balanced pH



4. Sources of water

- Common water sources
 - Streams
 - Rivers and lakes
 - Wells
 - Boreholes
 - Springs
 - Water harvesting i.e. rainwater harvesting
 - Municipality water
 - Dams
 - Reservoirs



5. Surface water (streams, rivers, lakes and reservoirs)

- Are popularly used in the rural areas
- Prone to contamination
- The herd is limited to drinking between 1-2 times only a day due to distance to watering points
- Most of municipality water is distributed from surface water



6. Underground water (springs, wells and boreholes)

- Refers to water found beneath earth's surface e.g.,
 - Springs
 - Wells
 - Boreholes

Note: harvested water (rainfall) is not categorized as either surface or underground water sources



7. Water distribution

- Can be done through:
 - Fetch and carry (rope and bucket)
 - Pumping water
 - Piping systems
- Should be well maintained (cleaned)



8. Water distribution to the herd

- Avail water close to the feeding area
- Cows should not walk long distance to get to water
- Water troughs should be strategically located
- Locate troughs in shaded area

Watch video:

https://www.youtube.com/watch?v=C7E6R_z2Hqo



9. Water intake/requirements for a cow

- Cows take in more water than feed
- They drink a lot after great feed intake and milking
- Adequate quality water is very important
- Watering points be well drained
- Low water uptake result in reduced feed intake



10. Factors affecting cows' water intake/requirements

- Weather conditions i.e. temperature & humidity
- Feeding system
- Productivity
- Body size (weight)
- Age
- Moisture content in feeds



11. Treating/purifying water

- Liver flukes can be found in wetlands or waterlogged areas. Do not allow animals into the water pan, instead pump into overhead tank before flowing to water troughs



Water pumped to overhead tank

Photo courtesy: Wilda Farm, KE

12. Water storage



Water storage also determines quality of water, if it is maintained or deteriorated.



Farms that harvest water or store water from other sources should have a good choice of storage facility.



Frequent cleaning of storage facilities should be done.



Water should not stay for long in an enclosed storage since it may cause water to have a bad odour.



Mending of holes should be to avoid water losses.



Farms should plan to have sufficient storage for dry seasons.



Excavated dam



Elevated plastic tanks



Tyres used for storage