Food and Agriculture Organization of the United Nations

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WHAT IS soil compaction

WHEN YOU APPLY TOO MUCH PRESSURE TO YOUR SOIL....

GOOD GROWTH OF PLANT ROOTS
- efficient use of nutrients
- higher yield
- higher crop quality
- higher value of the crops on the market

IMPROVED NUTRIENT MANAGEMENT
- larger community of soil organisms
- better accessibility of nutrients for the roots

EASY TO DIG
- improved plant growth

GROUNDWATER

HEALTHY SOIL

ADEQUATE SOIL AERATION AND TEMPERATURE DISTRIBUTION

IMPROVED WATER MANAGEMENT
- more water infiltration
- adequate ground water recharge

DIFFICULTIES ON NUTRIENT MANAGEMENT
- decreased amount of soil organism's communities
- impact on nutrient cycling
- need for more fertilizers

SHALLOW AND DEFORMED ROOTS
- suffer from water stress
- lower quantity
- lower quality
- lower market value

DIFFICULTIES TO DIG
- plant's growth is hampered

WATER LOGGING
- issues with water management and ground water recharge
- no air to plant's roots
- enhanced erosion

COMPACTED SOIL

the risk for compaction depends on the soil particles type (soil texture), soil structure and aggregation, and mechanical stress

...THE SPACE BETWEEN SOIL PARTICLES IS REDUCED AND PLANT ROOTS CANNOT GROW WELL. BUT WHAT ARE SOIL PARTICLES?

soil particles represent the mineral part of the soil

LOW RISK for compaction ← → **HIGH RISK** for compaction

GRAVEL | SAND | SILT | CLAY

STEP 1 Does the soil smell mouldy?
- YES → YOUR SOIL IS COMPACTED
- NO → STEP 2

STEP 2 Can you dig a hole in your soil?
- NO → YOUR SOIL IS COMPACTED
- YES → STEP 3

STEP 3 Is it easy to dig a hole? (approx. a 30cm depth)
- NOT EASY → YOUR SOIL IS COMPACTED
- YES → STEP 4

STEP 4 Check how your crop/tree roots look
- SHALLOW AND/OR DEFORMED → YOUR SOIL IS COMPACTED
- LONG AND/OR WELL FORMED → STEP 5

STEP 5 Take a metal rod and push it deeper into the soil. How easy is it to push it?
- DIFFICULT, THE SOIL FEELS TOO HARD TO PUSH ANY FURTHER → THE DEEPER HORIZONS OF YOUR SOIL ARE COMPACTED
- EASY → WELL DONE! YOUR SOIL DOES NOT SEEM TO HAVE COMPACTION ISSUES

LET'S FIND OUT IF YOUR SOIL IS COMPACTED!

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GLOBAL SOIL PARTNERSHIP