

1

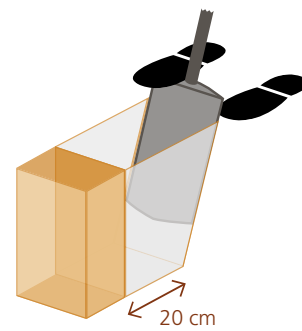


Location: in a representative part of the field – or specifically at a location with a visible problem. Areas with good ground cover are suitable as roots provide important information on the soil structure. For a reliable assessment of the situation in the field, taking several samples is recommended.

Ideal time: when the soil is slightly moist, i. e. when the soil is «friable/slightly plastic» according to the simple in-hand compaction test (see [Explanations and sample images](#)) or tensiometer values are between 15 and 40 cbar (e.g. from boden-messnetz.ch), or at least 4 days after heavy rain. Not directly after tillage.

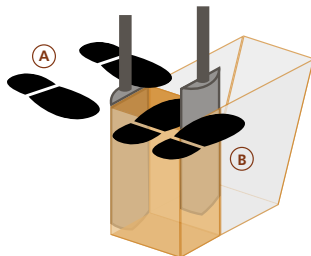
Equipment: metre rule and spade – preferably a Drainage spade. The spade sample can also be taken mechanically – see [reverse](#).

2



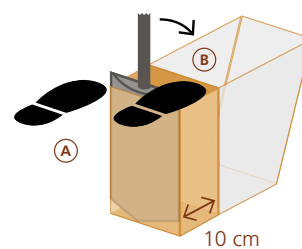
First dig a hole of approximately one spade blades depth and 20 cm in length. It should be slightly wider than the spade. Try to avoid damaging the side of the hole that will be used as a spade sample as best as possible.

3



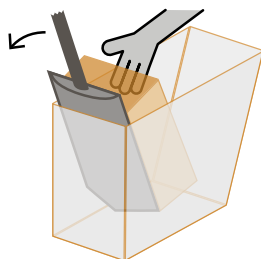
Insert the spade vertically on either side of the block to be excavated (A). Alternatively, you can cut slits into the sides of the block with a knife. If the soil is sticky or heavily covered, stabilise the soil surface with your feet B when pulling out the spade (B).

4



Then insert the spade vertically into the soil at a distance of approx. 10 cm from the hole (A). For drainage spades, leave approx. 5 cm of the spade protruding so as not to generate excessive leverage. Separate the soil tile from the remaining soil volume by pushing the spade slightly forwards with your shoulder (B).

5



Use the spade like a lever and carefully lift the sample out of the hole. Stabilise the block with your hand or place a second spade in front of the soil block and tip the block onto it.

6



Prepare the spade sample, e.g. with a knife: remove crushed and damaged areas, clean the surface, place a metre rule next to it, moisten the surface with a spray bottle if necessary.

7

Distinguish soil layers if you recognise changes in colour, soil type, structure, etc. Use your hands to separate the layers into their natural components (the aggregates, see explanation in [the explanations and example images](#)) and note whether you need a lot or a little force to do so. You can imagine that you are unfolding the layer like a book. With the [form](#) (document 2), you will be guided step by step through the description of the layers.

Alternatively, you can carry out a drop test to make the soil block break down into its natural aggregates. This makes the aggregates

more easily distinguishable, but also more difficult to assign to different soil layers. Using this approach means that it is also less easy to get a feel for the strength of binding within the soil. It is therefore advisable to make a second soil block that can be cut from the same hole.

For the drop test, drop the soil block from waist height from the spade onto a flat and hard surface and observe how it crumbles and how large the resulting aggregates are.



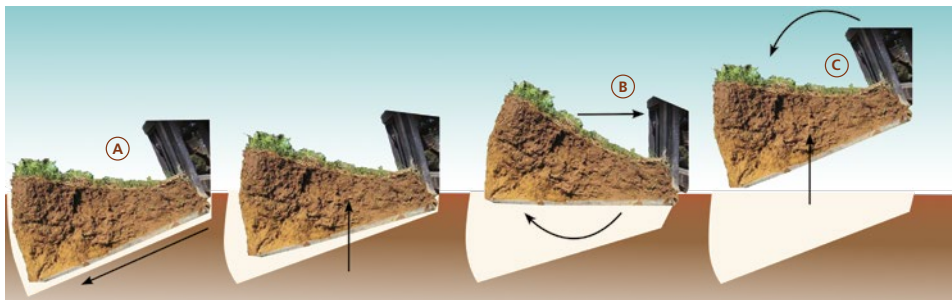
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Equipment: Metre rule and tractor with front loader and pallet fork. Place the two pallet forks at a distance of 30 cm from each other. The spade test can also be carried out by hand – see *front page*.



2



© Image source: «Guide méthodique du mini-profil 3D», projet Sol-D'Phy, Agro-Transfert-RT, France

- (A) Use the pallet forks to push the front loader completely (or as far as possible) into the ground at an angle of approx. 45 degrees. (B) Lift the profile out of the ground with a rapid tilting movement upwards. (C) Raise the front loader to working height and tilt the profile back into the horizontal position.

3



Prepare the spade sample, e.g. with a knife: remove crushed and damaged areas, clean the surface, place a metre rule next to it, moisten the surface with a spray bottle if necessary.

Subdivide different soil layers if you detect changes in colour, soil type, structure, etc. Divide the layers into their natural individual parts (the aggregates) and note whether you need a lot or a little force to do so. Imagine that you are opening up the layer like a book.

Imprint



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Authors: Stéphane Burgos (BFH-HAFL), Else Bünemann-König (FiBL), Nathalie Dakhel-Robert (AGRIDEA), Sophie van Geijtenbeek (FiBL), Olivier Heller (Agroscope), Alice Johannes (Agroscope), Liv Kellermann (BFH-HAFL), Jeremias Niggli (FiBL), Lisa Nilles (AGRIDEA), Markus Spuhler (AGRIDEA), Peter Weisskopf (Agroscope)

English Translation: Charles Reese (FiBL), Markus Spuhler (AGRIDEA)

Graphics: Claudia Ammann (feelGraphic), Merel Gooijer (AGRIDEA), Johanne Martin (AGRIDEA), Brigitta Maurer (FiBL)

Photos: Thomas Alföldi (FiBL), Joachim Brunotte (Johann Heinrich von Thünen-Institut), Nathalie Dakhel-Robert (AGRIDEA), Liv Kellermann (BFH-HAFL), Stefan Oechslin, Martin Roth, Simon Küng, Matthias Stettler, Markus Spuhler (AGRIDEA)

The method was developed in co-operation with numerous partners and on the basis of known spade sampling methods. For more information visit our website.

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