

Soil sampling instructions for mineral nitrogen determination

Mineral soils

1. Collect samples in early spring before applying nitrogen fertilizers.
2. Sample the fields of winter cereals before the beginning of spring vegetation, and the fields of spring cereals before sowing.
3. Primary samples should be taken from at least two layers: 0-30 cm, 30-60 cm and 60-90 cm.
4. The number of primary samples depends on the size and variability of the field, but for 1 bulk sample about 15-20 primary samples from a given place and layer should be taken.
5. Combine primary samples and mix thoroughly, removing visible parts of plants and stones.
6. Prepare a laboratory sample of 100-200 g from the bulk sample.
7. Place the sample in an airtight container or ziplock bag and label it.
8. The number of bulk samples in the case of a uniform terrain, soil quality and its management is as follows:

Number of bulk samples	Area [ha]
1	0-2
2	2-5
3	5-10
4	10-15
5	15-20
6	20-30

9. To avoid nitrogen losses, store samples at 4°C in the dark and take them to the laboratory as soon as possible.
10. The samples should be stored in a frozen state at -18°C until the analysis is performed.
11. Sample storage time at 2-5°C is 2-3 days.

Soil sampling instructions for mineral nitrogen determination

Organic soils

1. Samples should be taken in early spring or just after the start of vegetation, prior to the spreading of nitrogen fertilizers.
2. In the area occupied by a homogeneous soil formation and where grassland is uniform, determine 4 points evenly distributed over an area of 4 ha.
3. In the area where there are various soil formations or varied vegetation, determine 4 points evenly distributed over an area of 2 ha.
4. Four samples are taken at each of the designated points, and in the case of soils with large variations, 6 samples are taken.
5. To collect samples, use metal cylinders with two lids, with a capacity of 100 cm³, made of steel sheet with a maximum thickness of 1.5 mm, sharpened at one end.
6. Cut out a soil layer to a depth of 5 cm with a knife and level the surface.
7. Insert the cylinder vertically to a depth of 5 to 10 cm.
8. After removing the cylinder, cut off the soil protruding above the edges with a sharp knife.
9. If the soil structure is found to have been disturbed or crumbled, another sample should be taken.
10. After taking a soil sample, close the ends of the cylinder with the lids and clean the remaining soil off it.
11. Place the cylinders from each sampling point in a separate, labelled plastic bag.