Organic Matter in Soil

What is the issue?

- Punjab soils are degraded and depleted because organic matter is quite below (.5-.2%).
- There is a serious need to increase the organic matter of the soil.

Why is there low organic matter in the Punjab's soil?

- Punjab is the highest consumer of chemical fertilisers per hectare in the country.
- It is also the third highest pesticide consumer while accounting for just 1.53% of the total area of the country.
- In Punjab, farmers usually plant three crops a year.
- This means that the land gets disturbed every time they till, leading to a decrease in organic matter in the soil.

What is Organic Matter?

- Organic matter (OM) consists of plants, animal material which gets converted into humus after decomposing.
- It improves soil quality and fertility.
- It supplies nutrients, increases water-holding capacity and prevents soil erosion.
- This in turn needs lesser irrigation and helps arrest floods by alloying increased infiltration into the soil.
- Good OM also leads to proper utilisation of fertilisers put in the fields.

What is the ideal OM content in soil?

- Punjab Agricultural University (PAU) said that .75% organic matter in the soil is sufficient.
- Punjab agriculture department said it should be at least 1%.
- International standards suggest having around 2-3% in the soil.

How much OM is present in the Punjab soil?

- OM in the soil was .33% during the Green Revolution in 1966-67, which has increased to .51% at present.

- In the past over 50 years that have elapsed between the Green Revolution, the state registered a .18% increase of organic matter (OM) in its soil.
- Punjab's soil falls in the 'medium' category as for as availability of OM is concerned.

How much time does it take to increase OM in the Punjab soil?

- It can be increased by up to .50-1% in a decade's time, even though the increase was between .3 and .11% in the past five decades.
- This requires the collective efforts of Punjab government, experts and farmers.
- PAU had done experiments in their fields where they had added crop residues in the fields and had also done green manuring.
- As a result, the OM has increased from .42% a decade back to .67% now in their fields.
- The same can be replicated across Punjab.

What steps can be taken to increase OM in soil in Punjab?

- By tilling the land again and again, organic matter gets disturbed and decreases.
- Farmers can opt for two crops a year and grow green manure as a third crop.
- The green manure can be ploughed into the field to improve soil fertility.
- The best time to grow it is after wheat harvesting in April, and then ploughing it in the fields before paddy sowing in June.
- Putting cow dung in the fields, incorporating paddy and wheat stubble in soil, growing pulses are methods to enhance it.

Why is increasing OM important for Punjab?

- Punjab has already witnessed high productivity in several crops.
- But, enhancing this further with existing land holdings is possible when soil is enriched.
- If OM in the Punjab soil is enhanced, the fertility of the soil of low production areas can be enhanced to bring it at par with soil giving the highest production.
- Fertility of soil with high productivity can also be enhanced further by increasing organic matter to around 1%.

Source: The Indian Express



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