

Natural Ways To Amend Black Soil (Without Agrochemicals)

What Makes Black Soil Black?

The black color of black soil comes primarily from:

1. Iron & Manganese Oxides

Iron oxide (Fe_2O_3) and manganese oxide (MnO_2) coat soil particles.

These dark minerals give soil a deep brown to black hue.

2. Presence of Organic Matter

Though organic content is low, even small amounts of decomposed plant material (humus) can darken the soil.

3. Chemical Weathering of Basalt Rocks

Black soil forms from the weathering of volcanic basalt rocks. These rocks contain dark-colored minerals rich in iron, magnesium, and alumina, which tint the soil black over time.

4. Moisture Retention

Black soil holds water very well. When moist, it appears even darker due to water film on clay particles.

Farmer-friendly summary:

"Iron, volcanic rock dust, and just a touch of humus – that's what paints the soil black and makes it so fertile!"

Composition Of Black Soil

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Component	Approx. %	Function
Clay	40-60%	Holds moisture, makes soil heavy
Silt	20-30%	Contributes to soil fertility
Sand	10-20%	Improves drainage
Calcium carbonate (CaCO ₃)	5-10%	Alkaline, helps in nutrient availability
Magnesium carbonate (MgCO ₃)	1-5%	Supports plant metabolism
Iron oxide (Fe ₂ O ₃)	Trace-3%	Gives dark color, aids in photosynthesis
Alumina (Al ₂ O ₃)	5-15%	Involved in nutrient retention
Organic matter	Low (~1-2%)	Decomposed plant/animal matter

Restoration of Black Soil by PQNK - 4 easy steps

Prepare field for irrigation



Break the hardpan



Make permanent raised beds



Restoring soil with cover - roots in soil beds mulched

