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# Black soils in Morocco

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Launch of the  
International Research  
Institution of Black Soils





## Black soils of Central Morocco Agricultural Area

**General facts about black soils in Central Morocco :**

- Black soils cover an estimated area of **1 Million ha.**
- Black soils are mainly present in plains, plateaus and highland depressions and **have a high potential of productivity (Cereal, sugar beet, fruit trees,..).**
- Black soils' genesis is mainly influenced by landform, parent material and paleo-climate condition of Central Morocco.
- Dominant black soil orders are Vertisols, Calcic Kastanozems and Calcaric Chernozems.

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## Black soils of Central Morocco Agricultural Area

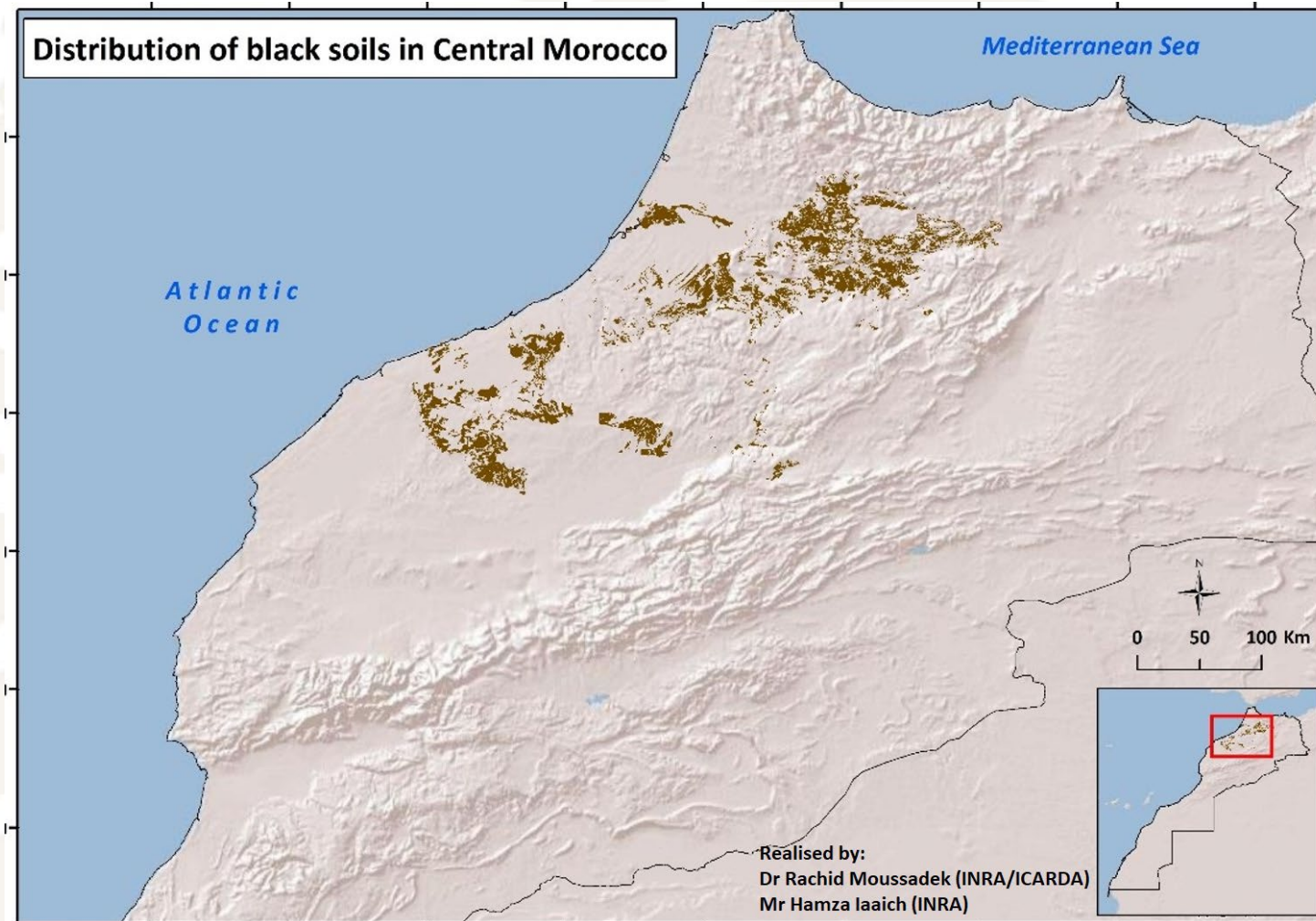
### General facts about blacks oils in Central Morocco

		Vertisols	Calcic Kastanozems	Calcaric Chernozems
Landform	Plains	*		
	Plateaus	*	*	*
	Depressions	*	*	
Parent material	Clay	*		
	Marls	*		
	Limestone		*	*
	Sandstone	*		
Paleo-climate	Seasonal	*		
	Steppic		*	*

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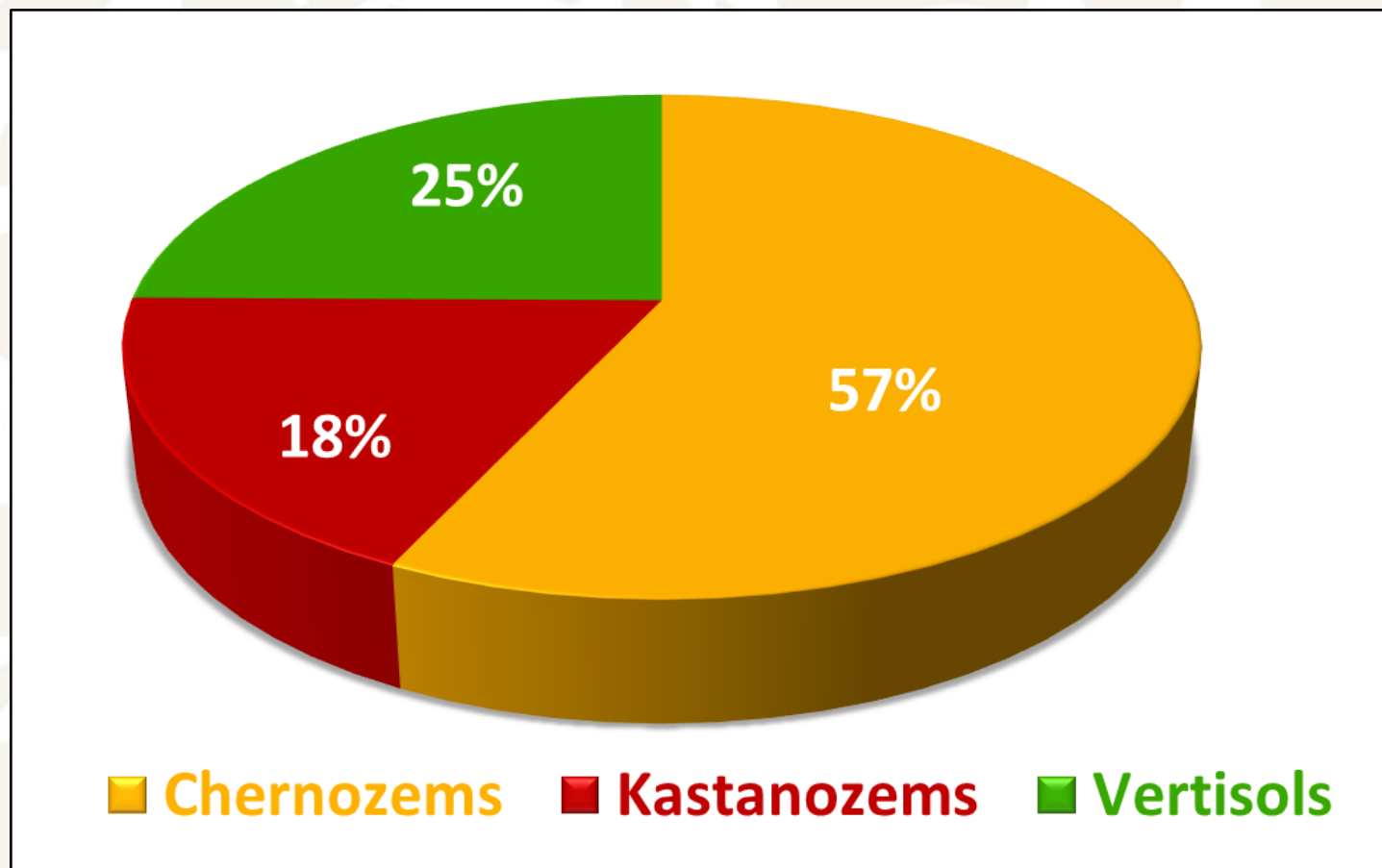


**Spatial distribution of black soils in Central Morocco**

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# Black soils of Central Morocco Agricultural Area

## Representative black soils in Central Morocco



**Vertisol**



**Kastanozem**



**Chernozem**



**Vertisol  
(highland)**

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# Black soils of Central Morocco Agricultural Area

## Some morphological characteristics of black soils in Central Morocco

### Vertisol

**0 – 30 cm: 5 Y 3/2, 4/2 (dry)**, grey to black, **well decomposed organic matter** incorporated to mineral matter and uniformly distributed on and through pedic elements, clayey, cracks, slickensides, progressive regular limit

**30 – 90 cm: 5 Y 4/2, 5/2 (dry)**, grey, **uniformly distributed organic matter that is well incorporated to mineral matter (clay-humic complex)**, clayey, sub-horizontal cracks, lots of slickensides, net and irregular limit

**90 – 120 cm: 5 Y 6/4, 7/7**, clear brown, clayey, corpogene elements, ferro-manganic pisolites, rootlets, net and irregular limit



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## Some morphological characteristics of black soils in Central Morocco

### Calcic Kastanozem

**0 – 20 cm:** 5 YR 3/2 (moist), fine polyedric structure, calcareous, fine to medium roots, friable, calcareous nodules, **well decomposed organic matter**, gradual transition

**20 – 40 cm:** 5 YR 3/2 (moist), polyedric structure, calcareous nodules, porous, lowly friable, fine and medium roots, net transition

**40 – 150 cm:** Tender calcareous encrusting



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## Some morphological characteristics of black soils in Central Morocco

### Calcaric Chernozem

**0 – 20 cm:** Dark brown (**7,5 YR 3/2 dry**), clayey, fine polyhedral structure, **organic matter well incorporated to mineral matter**, 5% gravels, low effervescence, net limit

**20 – 50 cm:** Dark brown (**7,5 YR 3/2 dry and 7,5 YR 4/3 humid**), clayey, **subangular** polyhedral to prismatic structure, porous, **organic matter well incorporated to mineral matter**, 10 % of gravels, low effervescence, pseudomycelia, irregular undulated limit

**50 – 100 cm:** Clear yellow, silty-clayey, massive structure, effervescence, calcareous crust



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**Thank you !**

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