FE2: Acidic, Dystrophic, Red Ferrosol

General description of the soil
A deep, strongly structured Red Ferrosol with a low base status (i.e. Dystrophic) in the major part of the B2 horizon which is strongly acid.

Distribution:
Widespread in small areas of high rainfall and basic igneous rocks extending from Tasmania to the base of Cape York Peninsula.

Typical land use:
Generally cleared and used for sugar cane in Queensland and dairying or horticulture further south.

Common variants:
Soil depth may range from 1.0 to 2.0 m to greater than 3.0 m.

World Reference Base:
Ferralic Nitisol.

Other names:
Krasnozems.

Environment and location of the example profile

Soil morphology

Site location

Site climate

Innisfail district, north Queensland

Soil chemical and physical properties

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Sample Depth (m)</th>
<th>pH H₂O</th>
<th>pH CaCl₂</th>
<th>Electric Cond. dS/m</th>
<th>CaCO₃ %</th>
<th>Org. C %</th>
<th>Extr. P mg/kg</th>
<th>Total P %</th>
<th>Total K %</th>
<th>Cation exchange properties</th>
<th>ESP %</th>
<th>Bulk dens. Mg/m³</th>
<th>Particle size %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>0.00-0.10</td>
<td>5.7</td>
<td>0.04</td>
<td>4.9</td>
<td>10</td>
<td>0.162</td>
<td>0.023</td>
<td>0.1</td>
<td>0.3</td>
<td>0.5</td>
<td>Ca</td>
<td>Mg</td>
<td>K</td>
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<tr>
<td>A3</td>
<td>0.10-0.20</td>
<td>5.4</td>
<td>0.03</td>
<td>2.6</td>
<td>4</td>
<td>0.137</td>
<td>0.021</td>
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<td>0.2</td>
<td>Ca</td>
<td>Mg</td>
<td>K</td>
</tr>
<tr>
<td>B1</td>
<td>0.20-0.30</td>
<td>5.2</td>
<td>0.02</td>
<td>1.8</td>
<td>4</td>
<td>0.02</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>Ca</td>
<td>Mg</td>
<td>K</td>
</tr>
<tr>
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<td>Mg</td>
<td>K</td>
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<tr>
<td>B2</td>
<td>1.20-1.50</td>
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<td>0.3</td>
<td>Ca</td>
<td>Mg</td>
<td>K</td>
</tr>
</tbody>
</table>

Other names:
Krasnozems.

Environment and location of the example profile

Landform:
Undulating low hills.

Parent material or substrate:
Basalt.

Drainage class:
Rapidly drained.

Surface condition:
Soft.

Site disturbance:
No site disturbance.

Native vegetation:
Lowland rainforest.

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<td>0.01</td>
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<tr>
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</table>
Key profile properties

**Infiltration:** Rapid.

**Available water store:** Large.

**Permeability:** Very high to high in the deeper layers.

**Physical root limitations:** None.

**Erosion hazard:** Can be severe on slopes.

**Nutrient availability:** General fertility level is low. Generally require nitrogen and phosphorus applications.

**Toxicities:** Problems with strong acidity may arise.

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Undulating low basalt hills, originally lowland rainforest, now mainly sugar cane. Near Innisfail, north Queensland.

Acknowledgements: Soil image, soil description and laboratory data: CSIRO Land and Water. Profile T64. Landscape image: CSIRO.