

Salinity or sodium problems

Soils affected by salts are grouped into three classes: saline, sodic, and saline-sodic.

SALINE soils have enough water-soluble salts to impair their productivity by inhibiting seed germination or causing yield reduction.

SODIC or sodium dominated soils have poor physical condition and usually high pH (alkali) causing very poor water percolation, restricted root growth, and nutritional imbalance. Exchangeable Sodium Percentage is usually 15 or more.

SALINE-SODIC (saline-alkali) soils are salty and, in addition, have damaging amounts of sodium.

Saline seeps are recently developed salty areas in land that have characteristics of saline or saline-sodic soils. They are wet some or all of the time, may have salt crusts, and may cause reduced crop or grass growth or eliminate it entirely. They are basically low volume, salty springs caused by excess water in the profile, due primarily to the crop-fallow system of farming.

Saline seeps can often be detected by visual observation of rank wheat or barley growth indicating a subirrigated condition or rising water table, the first indicator that a saline seep may occur. In time, the accumulation of harmful salts will appear causing crops to become stunted or fail to germinate. Kochia and foxtail barley are early indicators of seeps and are generally found around the edges. Dying trees are warning signs in some cases.

With additional accumulation of salts, the soil structure will disintegrate, turn a darker color below the white crust surface, and become abnormally mellow. The seeps will continue to increase in size, become extremely toxic in the center so that no vegetation can survive, and, finally, water will flow from the seep unless the underground flow is checked. These waters are extremely toxic and may poison livestock or wildlife.