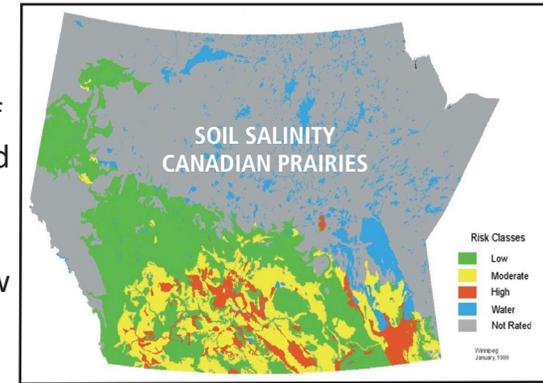


# Penergetic k effectively converts alkaline land into productive agricultural use

Alkaline soils are common in semi-arid and arid climatic conditions and, as the map opposite indicates, they are present in much of the western half of the continental United States.

Saline and alkaline soils are characterized by high pH (7 or higher) and are formed by the weathering of rocks rich in minerals, like calcium, magnesium and sodium, and in acids like sulfurous acid. On irrigated land and areas with a high-subsoil water table, salts accumulate in the lower layer and come to the surface by capillary action as a result of evaporation. These soils have poor drainage and low fertility as nutrient availability is often limited. As a result, in alkaline soils, plants can become stunted or, not grow because these soils are not as soluble as acidic soils. In alkaline soils, inorganic phosphorus (P) can become bound to calcium.



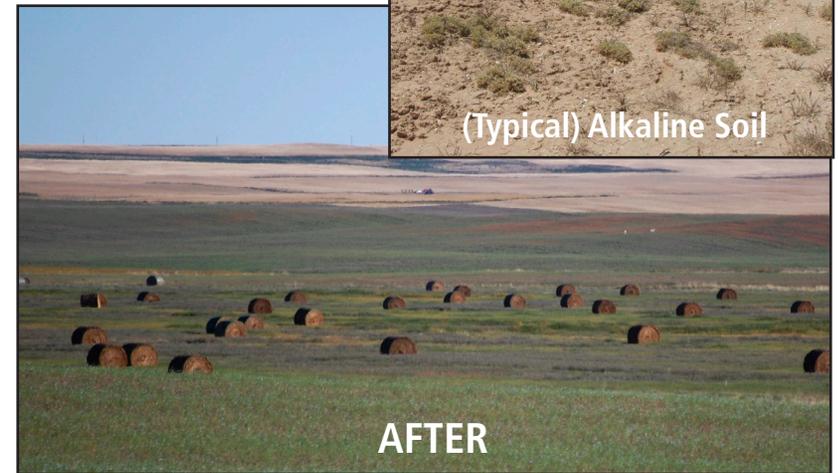
The challenge is to bring alkaline and saline soils into productive agricultural use. Due to their low infiltration capacity, water stagnates on the soil easily and, in dry periods, cultivation is difficult without (normally) the extensive use of intensive farm management practices – irrigation water and initiatives to support improved drainage.

≈ **PENERGETIC K MADE THIS FORMERLY ALKALINE FIELD PRODUCTIVE!** ≈

**HISTORY:** Nothing of value had been grown on this land in the past 20+ years. Historically, only koshia (an alkaline soil pH tolerant invasive weed) has grown on this ground.

**TREATMENT:** August 2015: 800 grams/acre Penergetic k (soil activator) applied.  
Spring 2016: 300 grams/acre Penergetic k (soil activator) applied.

**RESULTS:** Field planted in alfalfa. Cut in late July. Yield: 1.0 ton/acre (dryland)  
**[100% more production than at any time in the past!]**



## Dry Corners of Irrigated Wheat Field Brought into Production with Penergetic k

Based on the experience above, several other alkalki fields have been remediated and brought into productive use. For instance, the “dry corners” of a pivot irrigated field, that had historically ended up lying fallow (no production), was able to grow spring wheat at 38 bu/acre (dryland) vs. nothing before.

\*\* Similar positive results have been experienced with **solonetzic soil** conditions (salt hardpan layer), which are very challenging to grow a good crop on. The field on the left (shown in peas) received 300 g / ac. of Penergetic k. Four years prior nothing would grow there; now the producer says “*its the best looking crop we have ever had on this 240 acres.*”



**Your Penergetic Canada Rep can tell you more.**