

Plant Science 2018: Healthy soils with conservation agriculture systems-Mohammad Esmaeil Asadi-Golestan Agricultural and Natural Resources Research and Education Center

Mohammad Esmaeil Asadi

Golestan Agricultural and Natural Resources Research and Education Center, Iran

Soil is the network of interacting living organisms within the earth's surface layer, which support life above ground plants and animals, including humans. Soil filters the rainwater and regulates the discharge of excess rainwater, preventing flooding; it is capable of storing large amounts of organic carbon; it buffers against pollutants, including CO₂. Many people don't realize that soil, especially healthy soil, is full of life. Bacteria, algae, microscopic insects, earthworms, beetles, ants, mites, and fungi are among them. Altogether, their value has been estimated at \$1.5 trillion a year worldwide. The healthiest soils are those with a diversity and abundance of life. Farmers who adapted Conservation Agriculture (CA) approach understand that tillage, the turning of the soil that has been the standard for growing crops for years and years, is disruptive to soil microbes and destructive to the soil system and its very structure. CA farmers grow a diversity of living plants in the soil as much of the time as practical, covering the soil and offering food to soil microbes through living roots. Those soil organisms, in turn, cycle nutrients back to the plant. CA-farming practices that involve minimal soil disturbance, permanent soil cover and the use of crop rotation to simultaneously maintain and boost yields, reduce costs for farmers-especially by saving fuel for the soil tillage-increase soil quality, reduce soil erosion and improve biological activity, all while increasing agricultural productivity, especially by increasing resilience to drought and climate change. Studies show a producer can save at least 30% of water consumption per hectare by changing from conventional tillage to CA. In this paper we will provide some examples and case studies from adoption and practices of CA in developed and developing countries especially Asian countries who got good results in terms of healthy soils.

It is evaluated that 95% of our food is straightforwardly or by implication created on our soil. Solid soils are the establishment of the food framework. Our soil are the reason for agribusiness and the medium where about all food-delivering plants develop. Solid soils produce sound harvests that thusly feed individuals and creatures. In reality, soil quality is straightforwardly connected to food quality and amount. Soils gracefully the basic supplements, water, oxygen and root bolster that our food-creating plants need to develop and thrive. They likewise fill in as a cushion to shield fragile plant establishes from exceptional vacillations in temperature. A sound soil is a living, unique biological system, abounding with minute and bigger life forms that perform numerous crucial capacities including changing over dead and rotting matter just as minerals to plant supplements (supplement cycling); controlling plant sickness, creepy crawly and weed bugs; improving soil structure with constructive outcomes for soil water and supplement holding limit, and at last improving yield creation. A sound soil additionally adds to alleviating environmental change by keeping up or expanding its carbon content. Soil natural issue - the result of on location organic disintegration - influences the compound and physical properties of the dirt and its general wellbeing. Its creation and breakdown rate influence: the dirt structure and porosity; the water invasion rate and dampness holding limit of soils; the decent variety and natural action of soil living beings; and plant supplement accessibility.

Supplement trades between natural issue, water and soil are basic to soil fruitfulness and should be kept up for manageable creation purposes. At the point when the dirt is abused for crop creation without reestablishing the natural issue and supplement contents, the supplement cycles are broken, soil fruitfulness decays and the equalization in the agro-

environment is demolished. Food accessibility depends on soils: nutritious and great quality food and creature grub must be delivered if our soil are sound living soils. In the course of the most recent 50 years, propels in agrarian innovation and expanded interest because of a developing populace have put our soil under expanding tension. In numerous nations, concentrated yield creation has drained the dirt, endangering the soil profitable limit and capacity to address the issues of people in the future.

With a worldwide populace that is anticipated to surpass 9 billion by 2050, exacerbated by rivalry for land and water assets and the effect of environmental change, our ebb and flow and future food security relies on our capacity to build yields and food quality utilizing the soil that are as of now under creation today. All-encompassing creation the executives frameworks that advance and improve agro-environment wellbeing that are socially, naturally and financially supportable are vital so as to secure our soil while keeping up high gainful limits.

Ranchers assume a focal job in this perspective. Various and assorted cultivating approaches advance the reasonable administration of soils with the objective of improving efficiency, for example: agroecology, protection agribusiness, natural

cultivating, zero culturing cultivating and agroforestry. At last, a superior comprehension of the linkages between soil life and environment work and the effect of human mediations will empower the decrease of negative effects and permit to catch the advantages of soil organic movement all the more successfully for a progressively maintainable and gainful farming.

References

Sedghi Marjan, Mohammadi Torkashvand Ali, Asadi Mohammad Esmail and Pazira Ebrahim (2018) Evaluation of contamination of some heavy metals in the soils around Shahid Salimi power plant, Neka, Mazandaran province, Iran. *Journal of Soil and Nature (JSN)* 10:1.

Feyzbakhsh M T, Kamkar B, Mokhtarpour H and Asadi M E (2015) Effect of soil water management and different sowing dates on maize yield and water use efficiency under drip irrigation system. *Archives of Agronomy and Soil Science* 61(11):1581-1592.

Shahrinezhad S, Asadi M E and Tohidloo G (2015) Effect of various tillage systems on viability, ermination, establishment and yield of wheat. *Journal of Research in Applied sciences* 2(4):108-118.