

One problem associated with raising traditional plants in a desert is depletion of the [ground water](#). [Drip irrigation](#) is one way to reduce the overall water demand. Another is to grow crops that are acclimated to the desert, such as [jojoba](#), [date palms](#), and [citrus](#).

[Native Americans](#) of the [Sonoran Desert](#) have long practiced (and continue to practice) desert agriculture without irrigation. This is highly dependent upon both winter snow and rain and summer [monsoonal](#) weather patterns which move moist tropical air from the [Gulf of Mexico](#) into northern [Mexico](#) and the southwestern U.S. states of [Arizona](#), [Utah](#), [New Mexico](#), and [Colorado](#). This moist air, combined with the intense solar heating of the ground, can cause the development of substantial [thunderstorms](#) that can deluge some portions of the ground with great amounts of water over a short time. While the surface quickly becomes dry, and there is much runoff of the water into normally dry streams and riverbeds, a substantial portion is absorbed into the upper soil levels. To take advantage of this condition for agriculture it is essential that crops be started early in the season, where they utilize residual winter water from [Pacific Ocean](#) storms originating in the [Gulf of Alaska](#) and other Winter Pacific storms from the tropics (the "Pineapple Express"). The early sprouts from planted

seeds (mostly beans, squash, strawberries, and maize) are protected by starting them in small dug holes, where they are both closer to the winter water remaining in the soil and protected from the early spring [frosts](#). Despite its success over a period of (likely) up to 14,000 years, there have been great difficulties with this form of agriculture since a drought beginning in 2002, with [global warming](#) suspected in changing weather patterns, and problems with ground water depletion due to extraction for modern conventional irrigated agriculture, metropolitan lawns, industrial purposes, and coal slurry pipelines (the latter now stopped through action by [Navajo](#) tribal authority).

(source; wikipedia)