

Erda Kroft grow out of Chapalote maize for Native Seed SEARCH

Planting was done by hand on the 3rd and 4th of July 2012. Three seeds per location were planted in rows - 30" apart, plants - 16" apart. Interplanted with winter squash.

I use no means of cultivation. Instead I feed a complex array of soil biota with biannual applications of mulch - gleanings from the chicken coops and the alpacas - spring and fall. The Chapalote was planted directly into this duff. No other fertilizers, amendments, pesticides or other inputs were used.

With the exception of the storm late on the 4th the Chapalote was given a light irrigation every evening until germination was complete - 3 days. Germination was 90%. By germination the moisture profile in the soil was good and irrigation had been reduced to a light irrigation every other day if no rain had fallen. After growing to 5" the 3 plants were thinned to one at each location. This ensured a full complement and provided the opportunity to do selective thinning. Three primary traits were preferred for selection; a short, stout morphology (to resist lodging), signs of early tillering, no yellowing or brown tips (indicating good nutrient reserves from the seed and tolerance of present conditions). After thinning the crop was irrigated every 4th day.

A storm brought 1.58 on the 12th. Thereafter irrigation was provided on the 17th, 26th, Aug. 2nd, 9th, 13th, 26th, the 1st of September with the final irrigation on the 17th. The monsoon ended on 9-11 with 2.08". The disparity of the time frame is due to interspersed rain events.

Drip irrigation is designed to work with bare soil - constantly exposed due to ongoing cultivation. Because drip only wets tiny spots on the surface of the ground, drip does not sufficiently moisten the mulch in my growing system to enhance decomposition and the development of humus. Although I've used drip in commercial applications since the mid '70's' I find it unsuitable for good soil development. Instead, I use very efficient microjets that do not atomize the water, thereby avoiding rapid evaporation before the water reaches the ground. These microjets produce very large 'singular' water droplets that decrease the amount of exposed surface area. Further efficiency is gained by running them only in the evening after sunset. I find this also allows a longer, more thorough hydration period thereby increasing vascular turgidity through the night verses morning or daytime irrigation. Although the use of microjets may require more frequent irrigation, I believe the overall amount of water utilized is less than drip. The microjets are raised as the maize grows. I have found that my mulching system not only retains moisture in the soil, but when combined with a zero till system, it provides a more complex ecological profile in the soil. Furthermore, the buildup of humus (destroyed by cultivation) also keeps salt buildup - common in constantly cultivated, drip irrigated soils - from occurring. The elimination of the use of finite fossil fuels to lay bare the soil (and destroy beneficial soil flora and fauna in the process) accumulates even more benefits.

Grasshoppers were a major issue this year and in spite of attempts at hand pollinating an earlier crop of red dent maize, pollination was very poor with that crop due to the

grasshoppers eating the tassels and silks. After growing the red dent here for many years this was the first year it was essentially a complete failure.

Hand pollination was done with the Chapalote as well. I feared the same problem for the Chapalote and was surprised when I harvested it over several days in during the third week in October to find that it had not succumbed to the hoppers. Although it likely did not perform as well as it might have without grasshoppers, it never-the-less gave a decent crop.

Tillering was early and heavy with quite a few plants having 4 or 5 tillers. Plants averaged 8' with two ears per plant. Many of those ears were on tillers. Some had only one ear per plant, usually but not always, on the main stalk. Some had 2 ears on the main stalk with one or sometimes two additional ears on tillers. Some had one ear on the main stalk with an ear on each of three tillers. About 30% of the tillers made ears, most of them smaller than the ones on the main stalk. It's my opinion that Chapalotes tendency to tiller heavily in my location may have saved the crop this year. Without those additional tillers providing pollen and silks at various times during the growing season when grasshopper activity was occasionally held at bay by prolonged cool rainy periods, overall production would have been reduced. Impressive. I may give up the old red dent for Chapalote.