



Biodiverse orchards on individual mounds with straw mulch and narrow swales

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Herdade das Cebolas (Alentejo) is a farm with 140 hectares, placed in the Mediterranean area of Portugal, with little rainfall (around 400 mm), and a long dry period (4 to 7 months) with frequent temperature peaks above 40 °C. While less winter frost occurs in the uphill areas, the soil there is very superficial. In the valley, the deeper soil tends to be waterlogged in winter and spring, which asphyxiates the roots.

At this farm, around 400 fruit trees were planted. To reduce the negative impacts of climate, in particular the dry period, we established a fivefold strategy was established. 1. Diversify species and cultivars that can stand the harsh summer while not being too sensitive to waterlogging. We focus especially on pomegranate cultivars (around 100), despite the fact that they are sensitive to *Phytophthora*. Other species include e.g. mulberry, fig, quince and jujube. 2. Drip irrigation during the summer. 3. Plant trees on earth mounds, which increases soil depth and decreases waterlogging. 4. Mulch each tree with straw (one small bale per tree per year). Mulching reduces evaporation, improves soil health, reduces the presence of weeds, and adds extra organic material through decomposition. It can include tomato or *physalis* bushes too. 5. Dig narrow swales. They allow us to catch run-off water and infiltrate more water in the soil. At the same time, we use the dugout soil to make the earth mounds. As part of a low tech approach, inspired by Ethiopian practices, the swale ditches are interrupted every 10 meter which prevents the water from accumulating at one extreme were the swale not perfectly on contours.

References and links:

<http://cebolasdocampinho.blogspot.com/2018/04/mar-es-2-avril-2018.html>



Figure 1. Swales and trees planted on earth mounds at Monte das Cebolas.
Credits Axel Gosseries.

Axel Gosseries

Herdade Monte das Cebolas

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