

Summary. Solarization is a simple and safe method to kill weed seeds, nematodes and soilborne diseases prior to planting flower and vegetable crops. During months when there is clear warm weather the sun can be used together with clear plastic film to heat soil to temperatures that kill soil pests. The plastic film is left in place for 4 to 6 weeks, and then removed. The soil is then ready for planting.



Fig. 1. Solarization plastic installation (left) installed on flat ground (center) and on raised beds (right).

How to solarize soil:

1. The area to be solarized should be free of debris and large dirt clods
2. If you have clods, till the area to be treated. It is necessary to break up soil clods and plant debris in order to enhance heat conduction through the soil. The soil surface should be raked smooth before covering with plastic. A fine soil surface will allow the plastic covering to be placed in close contact with the soil, with few air pockets to interfere with direct solar heating
3. The soil should be moistened if dry, but not saturated. Wet soil conducts heat better than dry soil, so it should have a crumbly damp look to it, like it would at planting time
4. Place clear plastic over the soil surface and bury the edges, or place bricks or heavy objects on the edges, to keep the plastic in place and from blowing away
5. The plastic can be clear construction grade plastic and vary in thickness from 25 to 150 μm . The thinner plastic (25-50 μm) will allow better soil heating since it will reflect less solar energy
6. The plastic should be left in place for 4-6 weeks.
7. Do not walk on the plastic or permit animals to walk on the plastic and damage the plastic. Repair damage to plastic.



Fig. 2. Crops grown after solarization: lettuce (left), strawberry (right)

Final notes

The soil temperatures will reach more than 60°C on warm days which controls many weeds and diseases.

Important! After plastic is removed do not till the soil to avoid bringing contaminated soil from below the solarization treated zone. It is best to remove the plastic and then plant into the soil within a few hours.

