Floating row covers

What are floating row covers?

   Floating row covers are pieces of light, strong, cloth-like material. They are usually white. You can buy them in sizes ranging in width from 3 to 30 m (10-100 ft) and in length from 8-300 m (25-1000 ft). Several different companies make them, including Reemay, Agrifabric, and Harvestgard, and they are sold at most local garden stores. They can be very thin or relatively thick. Buying a thicker kind is generally better — it may last two or even three years in the garden.

How are they used in the garden?

   The most common use of row covers is for what gardeners call *season extension* — basically, making a longer period of warm weather for the plants you want to grow. Like glass, floating row covers allow light through and then trap its energy as heat. Depending on what you like to grow, you can use this property in the spring (to help plants get growing earlier), in the fall (to help keep them alive longer), and in the summer (to help plants like tomatoes, eggplants, and watermelons that do best in very hot weather). Row covers trap enough heat that you can safely plant salad greens, peas, carrots, beets, and other cold-tolerant crops in early April, and keep salad greens, cucumbers, tomatoes, and other late-summer crops producing into October or even November. If you want to grow watermelons, eggplants, and other heat-demanding crops in Wisconsin, you can really only do it productively with row covers.

   Note that for some crops (salad greens, for example), you may be able to leave the row covers on from the day you plant seeds to the day you want to harvest salad (except that you may need to remove it once to weed). For other crops (such as cucumbers and eggplants), the row covers provide extra heat when the plants are young, but must be removed when the plants start to flower so that insects can pollinate the flowers (often, by this time the plants are so big that you need to remove the covers anyway). Row covers used only for warming purposes can be held down with some rocks rocks, some shovelfuls of soil, or sections of metal pipe.

   The other main use of row covers is for *pest prevention*. Row cover is full of tiny holes (which is great — you can water your plants right through the cover), but these holes are too small for insect pests. If you put row cover over a crop early enough, you can keep insect pests from getting to it, eating it, and laying eggs on it. This only works *if you use soil or sections of metal pipe to seal the **entire** edge of the row cover against the ground*. Pests that can be dealt with this way include flea beetles (which are a problem for plants such as young cabbages and kale, some salad greens, and eggplant), cucumber beetles, Mexican bean beetles, Colorado potato beetles, and Japanese beetles. Row covers will not keep 100% of pests away from your plants, but they can help a lot, and are a good alternative to toxic pesticides.

   Some crops (particularly ones like cucumbers and eggplant that need hot weather and also have many insect pests) benefit from use of row cover for both purposes at the same time.

What else do I need to know?

   Row covers trap some water in addition to heat, so you may not need to water your plants as often if they are under row cover. You should always store row covers inside and out of the light when not in use. When storing them, make sure they are clean (if possible) and *dry* (absolutely necessary!). If you put them away wet, they will get moldy, and the mold changes the fabric so that light can no longer go through it.

To apply floating row covers follow the instructions below. If you are growing plants from seed, start at step 1. If you are growing plants from transplants (small plants grown or purchased elsewhere in pots), start at step 9.

A 1 m (40 in) wide bed planted with three rows
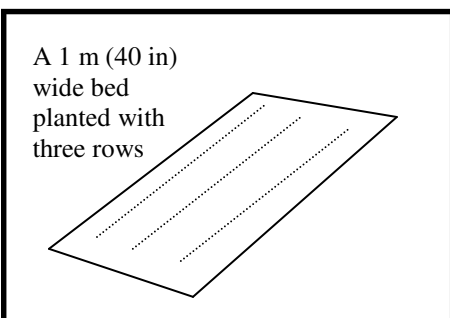
1. Buy a floating row cover. Plant seeds as appropriate for a given crop. If you are using beds, make sure that your beds are at least 60 cm (24 in) *narrower* than your floating row cover. Beds can be any length desired as long as they are shorter than the length of your row cover.
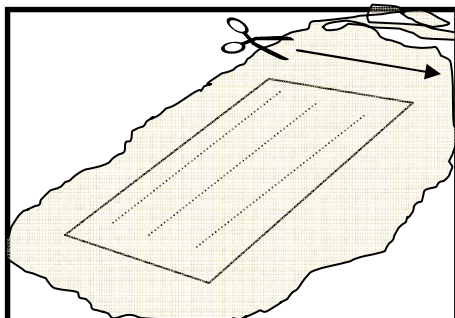

2. Unfold your row cover and spread it over the length of the bed which is to be covered. Cut it with scissors or a knife so that it is about 60 cm (24) in longer than the bed — precision is not required.
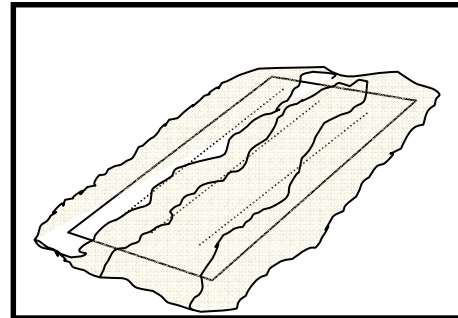

3. Bring extra material onto the bed, leaving only 10-20 cm sticking out beyond the sides and ends of the beds. DO NOT spread the row cover tightly across the bed!
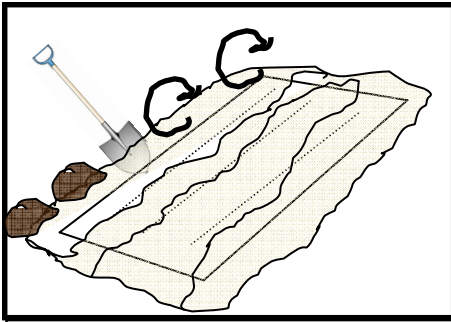
4. Use a digging tool to move soil out from under the edges of the row cover, putting each scoop of soil back in the same small hole you took it out of but *on top* of the row cover. Repeat this around all four corners of the row cover at about 30 cm (12 in) intervals, making sure not to get soil on top of your rows of seeds. Also make sure to keep the row cover loose in the middle of the bed.
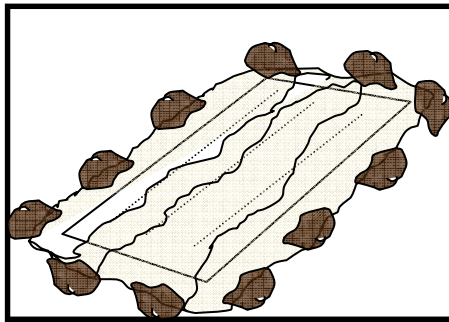

5. If all you care about is warming up the soil for your crop (to grow basil, for example), you are done when your bed looks like this. If you want to keep pests out, however, you should go around and perform the same scooping action until there is a continuous band of soil sealing the row cover to the ground.
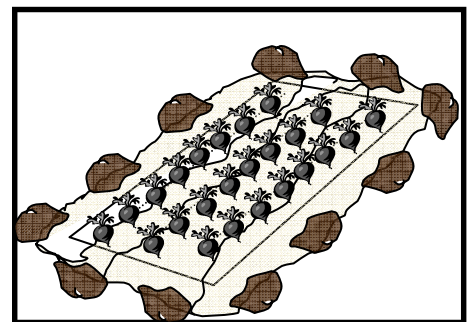

6. As your plants grow, you can leave the row cover in place most of the time. Watering can be done without removing the row cover, though gardeners with clayey soils should make sure that the row cover doesn't stick to the soil as it dries.
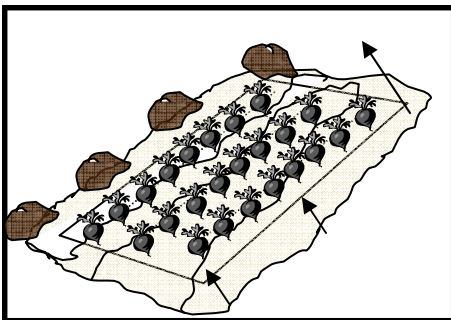

7. Unfortunately, weeds also do well in the conditions under a row cover. To weed under the row cover, lift the soil off three of the edges of the row cover with your hands and peel the sheet carefully back over the fourth side without disturbing the soil on that side. When you are done weeding, move the row cover back over the bed and use a spade to move the soil back over the three free sides. Make sure to leave the extra material in the middle as before. Weed again later as needed.
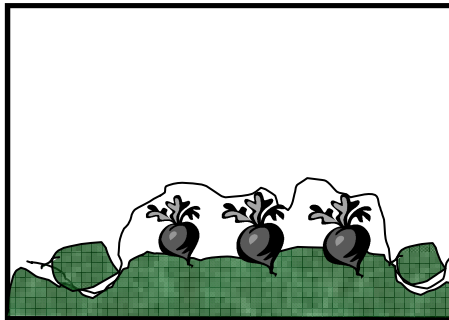
8. As your plants get bigger, they will push up the row cover — this is why it's important to leave the extra material on top of the bed. You can leave the row cover on until the plants are literally pushing it off, at which point you should remove it, shake it out, let it dry, and store it (or use it somewhere else). If the plants do not push the row cover off, you generally do not have to remove it except to harvest. There are a few crops, however — strawberries, melons, summer and winter squash, and cucumbers—that MUST be un-covered when they are about to flower. These crops are pollinated by insects that cannot visit the flow-ers when the row cover is on.
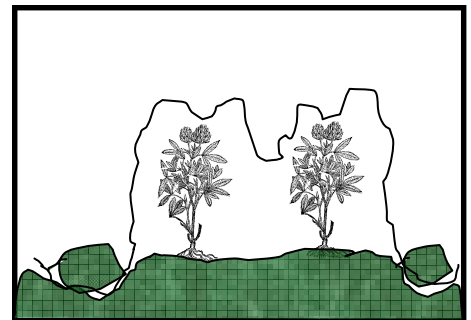
9. (for transplants only). Plant your plants. Cover the bed with floating row cover as described in steps 1-5, making sure to leave **a lot** of extra material over the bed so that the plants have room to grow. Water and weed as described in steps 6-8, removing the row cover only if the plants are so big that they are about to push it off. With the exception of strawberries, melons, summer and winter squash, and cucumbers, you may choose to leave certain crops covered for their whole lifespan.
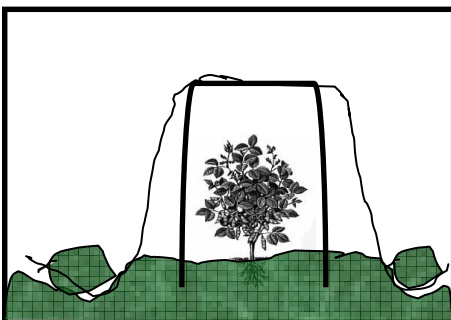
10. (Required if you want to use row covers for tomatoes, peppers, and eggplants; helpful for cucumbers and watermelons) Plant your plants. Place wood or wire hoops over the plants at about 1 m (3 ft) intervals along the bed (if your hoops come at least 60 cm (2 feet) off the ground, that's good). To do this, you can buy a spool of heavy wire and cut sections off it, open up wire coathangers, or cut flexible branches off small trees. Cover the hoops with floating row cover as described in steps 1-5. Arrange the row cover so it fits well but not tightly over the hoops. The hoops keep the row cover from touching the tips of the plants' stems, which are very sensitive. Remove the row cover when the plants have filled the available space.