

GROUND COVER

For any protected growing environment, the question arises regarding the use of ground cover. Whether the foundation is soil or concrete, there are documented benefits of using a specialized mesh cover as the base of the production system.

Ground cover is a great tool to increase the cleanliness of your operation. Regardless of what the base of the structure is, ground cover can be easily replaced year to year to create a clean slate for the next crop. It is much more difficult and time-consuming to surface sterilize concrete from a year's worth of algae and plant litter than it is to use a fresh layer of ground cover. If based on soil, it prevents the splashing of mud or soil particles from the ground up into the crop. It also serves as a barrier to weed growth.

Ideally, the entirety of the ground would be covered in ground cover. However, this can be expensive to do and may not be compatible with the spray/farm equipment moving through. Prioritizing ground cover as a strip underneath your plant rows will help achieve the benefits of using ground cover while reducing the overall cost.

Ground cover options are typically black or white. Black is useful for the shoulder seasons, as it absorbs a lot of the energy given off by the sun and helps warm the space. For crops that are planted in or close to the ground, this will boost production in the early days as plants establish. It will also accelerate ripening at the tail end of the season.



Figure 1. A raised-substrate bed production system. Black groundcover is used to cover the existing soil and house the soilless growing media. Photo credit: Talia Plaskett, Perennia

White ground cover is ideal for growing spaces that get overly hot through the summer months. By reflecting a large amount of radiant energy, it holds significantly less heat compared to black ground cover. For spaces that have issues with being overly warm through the peak of the season, white is the ideal choice. Many greenhouse components are also painted white (heating and irrigation pipes, hanging troughs etc.) to reduce heat absorption.



Figure 2. An example of a plastic, white ground cover in a greenhouse environment. Photo credit: Talia Plaskett, Perennia

Grass can be used as a form of ground cover in structures anchored in soil. The active respiration of grass will help increase humidity and the crop's ability to cope with high temperatures in the summer. However, the grass needs to be maintained through regular mowing and weeding and can be quite time-consuming and labour intensive.

Ground cover can be plastic or mesh. Although better at creating an impermeable barrier between the ground and the growing environment, plastic is quite slippery when wet and creates a slip risk for workers. Mesh is more permeable. Dry leaf matter on a mesh ground cover can slowly be ground into the mesh as workers and equipment move over it. This could result in an accumulation of disease particles in the mesh, amplified year to year if the ground cover is left for longer than a production cycle. By replacing mesh every year, however, you can mitigate the disease risk relatively well. This, of course, applies to a yearly crop production cycle for tomatoes, cucumbers, and strawberries, where plant debris is regularly discarded on the floor. For cleaner crops, you would not have to replace it as frequently.

It can be difficult to prioritize what colour/fabric to use. An ideal situation would be black ground cover through the spring and fall and white for the duration of the summer, but this is not a realistic setup. The most ideal ground cover will vary from production space to production space. For more information on the ideal ground cover for you, feel free to reach out to your protected crop specialist.