

Urban Cover Cropping: What We Aim to Achieve



Urban and small-scale growers often deal with compacted or contaminated soils, limited growing space, and inconsistent access to organic matter. Cover crops offer a practical, low-input solution—improving soil health, managing water, suppressing weeds, and supporting pollinators, all while fitting into tight spaces and diverse growing systems.



Goals for Using Cover Crops



Rebuild and Improve Urban Soils

Urban soils are often compacted, low in organic matter, or disrupted by past construction [1, 2].

- Deep-rooted cover crop species (brassicas) help compaction and improve aeration.
- Leftover or incorporated biomass from cover crops helps to increase organic matter and soil aggregation.



Reduce Soil Contaminants

Some cover crops have shown potential to reduce heavy metals or organic pollutants in contaminated urban soils by phytoremediation processes [3].

- Brassicas can bioaccumulate trace metals like lead, helping reduce surface contamination risk [4].
- Some legumes and grasses can create symbiotic relationships with microorganisms that bind contaminants or stimulate their breakdown [5].



Manage Stormwater

Urban areas struggle with runoff due to impermeable surfaces.

- Cover crops can be used to increase infiltration by improving soil porosity and to reduce runoff pollution by trapping sediment and nutrients before they enter storm drains [1, 6].



Enhance Urban Biodiversity

Cover crops can serve as mini ecosystems by creating areas where predatory insects and spiders can live and grow [7].

- Species like buckwheat, clover, and phacelia bloom quickly, attracting pollinators critical for urban food production [6].



Foster Community Learning

Incorporating cover crops into gardens and community plots promotes hands-on education and shared responsibility for soil stewardship.



Research Insights and Mayor Takeaways

Planting Method: Drilling is the most effective for planting cover crops, even at a small scale, as it typically results in better germination and growth than broadcasting. However, successful establishment from broadcasting is possible when followed by mulch or row covers and light irrigation [2, 8].

Microbial effects: Cover crop plots showed higher microbial biomass carbon in the fall, greater microbial biomass nitrogen in the summer, and increased microbial respiration compared to control plots [9].

Ground Cover: A study in New York found that the four cover crop combinations tested provided substantial ecosystem services, achieving 84–92% soil cover within six weeks. [2]

Pest Management: In Florida, farmers reported fewer pests after adopting cover crops [10]. Similarly, research in South Georgia found that beneficial insects (insidious flower bugs, big-eyed bugs, and lady beetles) were abundant in vetches, clovers, and certain cruciferous cover crops [7].

Nitrate Reduction: A global meta-analysis found that cover crops can reduce nitrate leaching by up to 67% compared to fallow, with Brassicaceae and Poaceae showing the greatest reductions at 75% and 52%, respectively [11].

Weed suppression: In New York, plots with cover crops saw an average weed reduction of 88–97% compared to controls, with overwintering species offering better suppression and biomass than winter-killed ones [2]. In Georgia, cover crop seasonal weed control reached 84.8% under conventional tillage and 71.6% under no-till [12].

☐ Management Considerations

- **Species Selection:** Choose cover crops based on your goals, planting window, and the next crop. Avoid species that may host pests or interfere with future plantings.
- **Termination:** Plan to mow, cut, or crimp cover crops before they go to seed. Timely termination prevents management issues and prepares the soil for food crops.

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