



Mulching

Minimize Soil Disturbance - Maximize Soil Cover - Maximize Continuous Living Roots - Maximize Diversity

KEEP SOIL COVERED!



Why Mulch? – Farmer perspective

- reduce weeding time and pressure
- irrigation efficiency = conserve moisture
- impact on soil health = protect soil & soil life
- cleaner produce



Overall Considerations

- Types of mulches – Natural vs. synthetic
- C:N ratios
- Location – beds vs. pathways vs. non-production
- Temperature
- Amounts to apply
- Planting into mulch
- Sourcing



C:N Ratios

Material	C:N Ratio
rye straw	82:1
wheat straw	80:1
oat straw	70:1
corn stover	57:1
rye cover crop (anthesis)	37:1
pea straw	29:1
rye cover crop (vegetative)	26:1
mature alfalfa hay	25:1
Ideal Microbial Diet	24:1
rotted barnyard manure	20:1
legume hay	17:1
beef manure	17:1
young alfalfa hay	13:1
hairy vetch cover crop	11:1
soil microbes (average)	8:1



Relative
Decomposition
Rate



Location



Planting Bed



Walkways / Pathways



Bed + Path



Non-production

Temperature



DARK → Heat up soil



LIGHT → Cool down soil / crops





Planting into Mulch



Planting into Mulch





Straw and Hay



Pros

- Good insulator, lightweight
- Moisture retention
- Soil protection
- Thick layer – effective weed barrier
- Hay = Nitrogen contribution

Cons

- Planting time
- Easily windblown
- Reapply throughout season
- Weed seeds (hay)

Straw and Hay – Application Methods

- Add to crop beds or pathways
- 3-4” optimal, 2” minimum
 - *Too thick > might affect disease (Tomatoes)*
- Transplant hole into mulch



Straw mulch covering 30" wide garden beds and walkways



Paper / newsprint / cardboard – Application

- On bed prior to planting – mulch up
 - *May reduce straw / hay needed on top*
 - *Layering – may restrict water infiltration*
- Walkways
- Non-production spaces – weed management
- Lasagna gardening – new bed prep



Straw and Hay – Planting Methods / Crops

- Long-season and transplanted crops (vs. direct seed)
- Transplant hole into mulch





Woodchips

- Most suited to walkways
 - After breaking down → flip onto bed
- Not ideal directly on production beds
 - Get in the way of seeders
 - Can tie up N if buried if incorporated
- Non-productive areas
 - Weed suppression
 - Native plantings



Pros

- Widely applicable
- Easily sourced – “Waste” material
- Lasts 2+ years

Cons

- High C:N ratio
- Lasts 2+ years



Compost



Pros

- Soil health
- Weed seed bank reduction
- Widely applicable – planting medium
- Direct seeded crops – planting equipment
- Nutrient contribution

Cons

- High-quality source challenging
- High pH, high Phosphorus
- Cost

Compost – Application & Planting Methods

- Layer on top of beds as a planting medium
- Transplants / direct seeds



Leaves



Shredded leaves and garlic

Pros

- Widely available
- Leaf mold compost – Increase SOM + beneficial soil microbes

Cons

- High C:N ratio (if not composted)
- Quality – municipal trash + contaminants









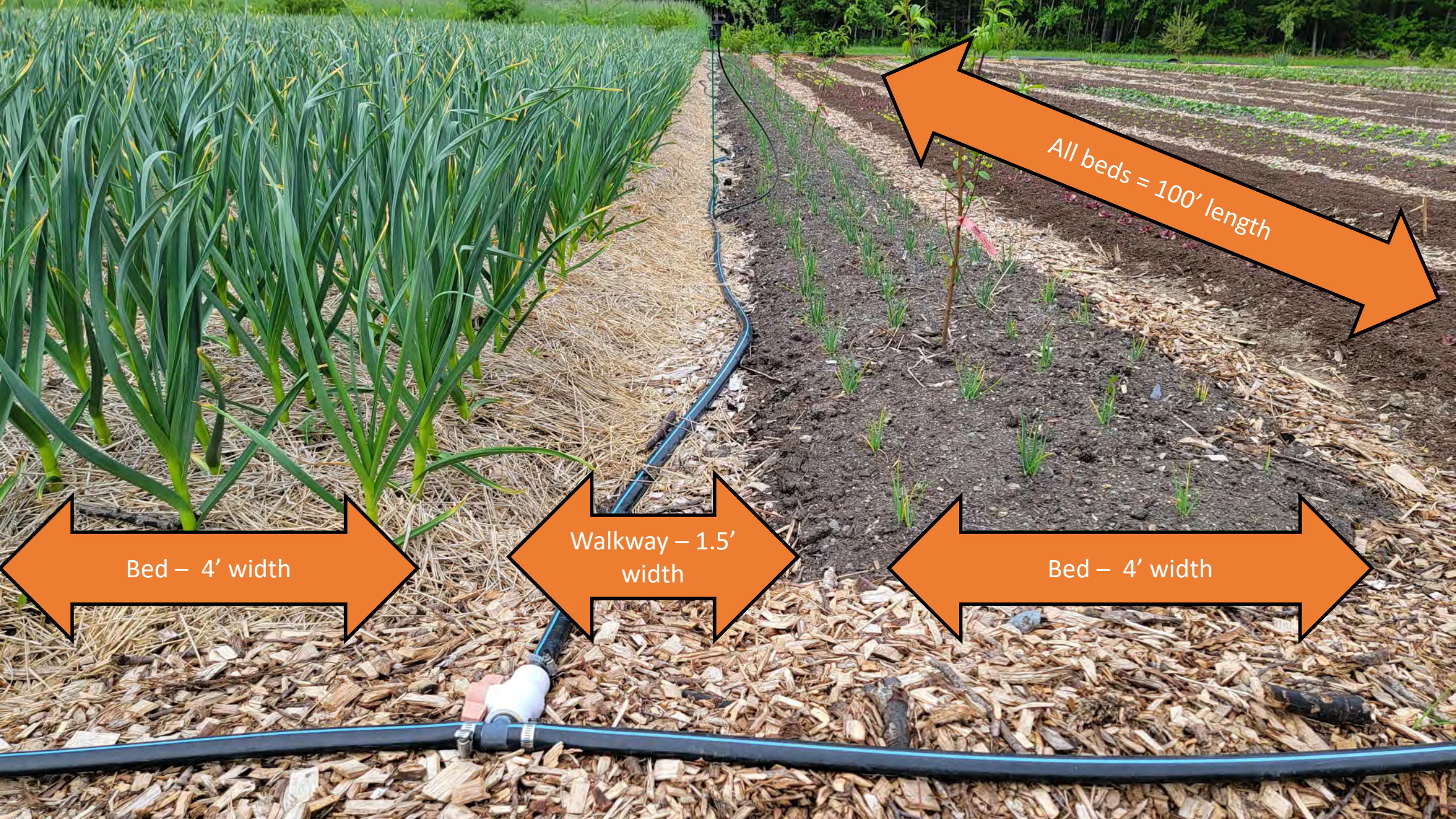












Bed - 4' width

Walkway - 1.5'
width

Bed - 4' width

All beds = 100' length