Bed Preparation

- Guidelines
- Tools and Use
- Bed layout
- Planting

Guidelines

- Avoid all unnecessary work: *"How about <u>not</u> doing this? How about <u>not</u> doing that?- that was my way of thinking"* Fukuoka

- Do not disturb the soil without definite need: harvesting root crops, planting transplants

- Minimize soil disturbance to the top two inches of the soil

- Effective bed preparation requires thoughtful and practical advanced planning based on crop rotation and cover crop strategy. eg Spring bed prep starts in the Fall.

- Time succession planting of crops and cover crops to minimize bare soil

- Never disturb the soil when it has a high moisture content. Even shallow tillage, less than two inches, when the soil is wet or dry should be avoided

- When transplanting, or direct seeding squash into hills, leave cover crop residue on the beds

- In some cases you can directly seed into a bed with no soil disturbance. This works well with broadcasting seeds into a light to moderate cover crop, then mow down cover crop and seeds will come up through the residue

Bed preparation depends upon a list of factors:

- Direct seeding or transplants
- Type of vegetable (fast or slow germinating, time to maturity, size and height of mature plant)
- Hand sowing or using a machine
- Using manual or powered equipment to prepare bed
- Weed pressure in the bed
- Insect or disease problems
- Overall soil health and tilth
- Previous cover crop / previous cash crop

Tools and Use

Hand tools for bed prep - Transplanting

- Make use of existing tools and equipment

- Scythe down cover crop

- Using a pick and trowel, plant into residue

Power Equipment for Bed Prep - Transplanting

- Use any type of mower or roller crimper to cut down cover crop

- Use a spread tiller, Firminator or Howard's rotovator, and set blades no deeper than two inches

The front unit of the…

Sub-Surface Tiller-Transplanter, developed by Dr. Ron Morse

…for planting vegetable starts and potato seed through mechanically-killed or winter-killed cover crop mulches.

The front disk slices the residue, the shank (whose depth is adjustable) loosens the soil without inverting or incorporating the residues, the tube delivers organic fertilizer, and the fluted coulter mixes it into the planting slot. A no-till transplanter with specially-designed press wheels then places seedlings or seed potatoes into the slot.

Hand Tools for Bed Prep - Direct Seeding

- Scythe down cover crop if necessary - leave crop tall enough to pull out by hand

Experiment: hand pulling previous season's salad greens cover crop

Experiment: hand pulling fava beans cover crop

- If necessary use a broad fork or spading fork to assist in pulling the cover crops

- When using the fork do not lift the soil up. The purpose of the fork is to make it possible to hand pull the cover crop.

- Use a hoe or pick to slightly undercut roots under the soil line (Adx-like pick, Japanese Hoe)


- Rake out residue and move to end of bed. As crop matures you can mulch with the residue or just compost at end of bed


Power tools for be prep - direct seeding

- Use a spread cultivator, Howard's rotovator or any cultivator set shallow (not deeper than 2 inches)

- Rake out

Tools for Seeding the Bed

- Seed Drill
- Planter
- Manual push planter
- Seeding by hand
- Broadcasting and covering with residue

Bed Layout

Experiment: Stake out corners and put a string on one side of bed

Experiment: Pull rake or layout tool with appropriate row spacing or use string to mark rows

- Even row spacing is a big help with planting and especially early weeding before and just after seedlings have emerged

Experiment: beds watered by hand or drip tape prior to seeding

Experiment: roller used in rows before and after seeding to ensure good contact with soil and encourage even germination

Experiment: Seeds covered in fine compost and soil mix. Drip was tape placed directly over seeds until seedlings emerged. Tape then moved to side of row.

- Do not attempt to plant a standing permanent ground cover in the beds or paths or perennial crop prior to having gained significant control over weeds and grasses

Experiment:
No-till carrot bed one month after seeding