

Year-round Salad Production

Jason Hirtz

Box Turtle Farm

Mount Vernon, MO



Salad production since 2007

- Winter salad production 2013
- Summer salad production 2018

Salad accounts for about 65% of our overall sales

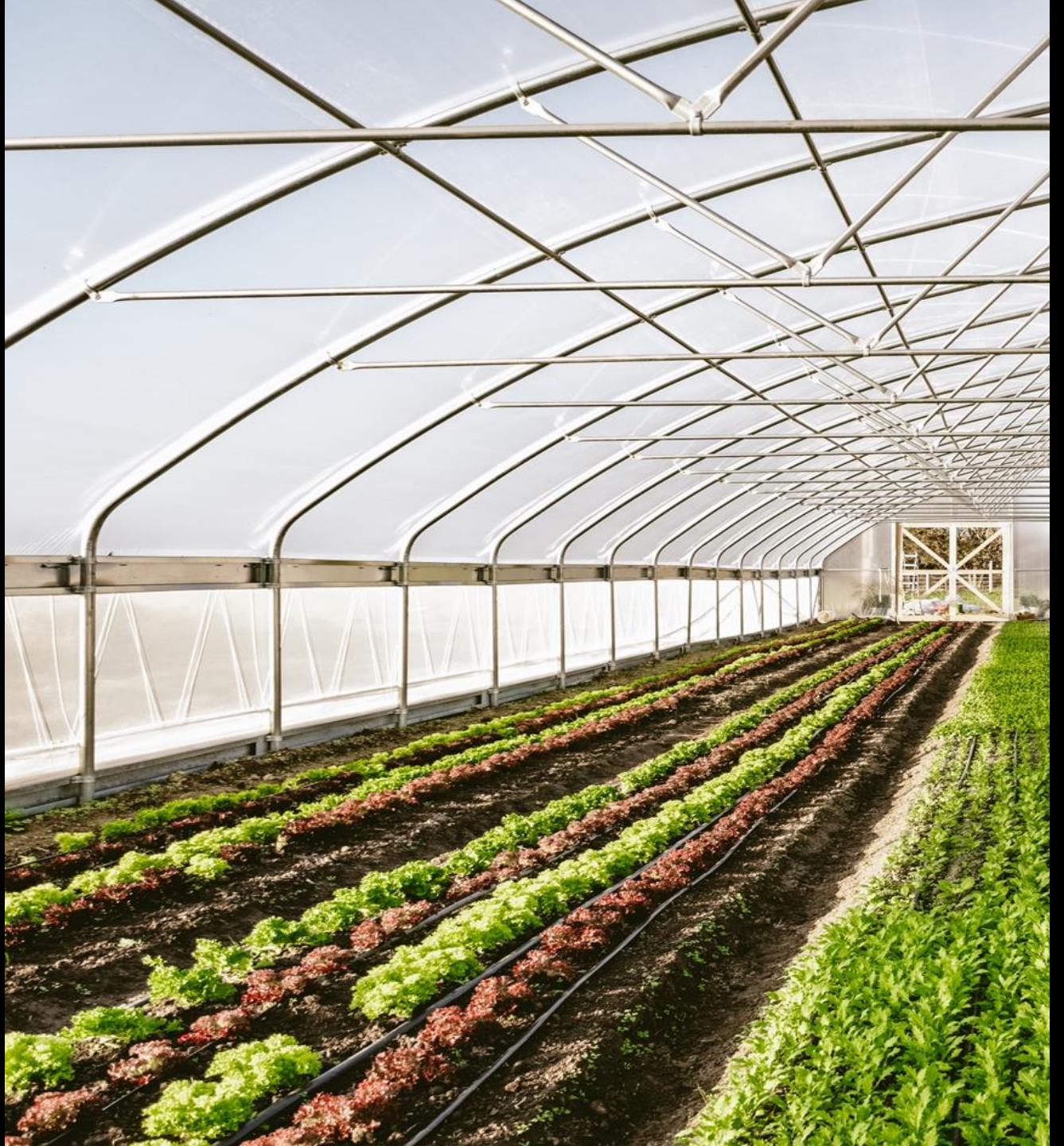
- Split evenly between grocers and restaurants



Field production

- Very profitable
- Some years, harvesting outdoors is possible into December
- Weather makes this crop inconsistent

High tunnels make weekly salad production possible.





What are One Cut/Multi Leaf Lettuces?

- Head lettuces bred for salad production
 - Crunchier texture than baby lettuce
 - High loft fills retail bags and dinner plates
-
- Johnny's - Salanova
 - High Mowing Seeds and Osbourne – Easyleaf

- Multi-leaf lettuces can be sold alone
- Mix lettuces with baby greens for maximum marketability
- Mixing two distinctly different crops (lettuces and greens) helps buffer seasonal peaks and valleys



BOX
TURTLE
FARM

Mount Vernon, Missouri
Certified Organic by ODAFF
100% Organic

Mama Jean's Greens
SALAD MIX

5 oz wt (141 g)

Wash before enjoying.

BOX
TURTLE
FARM

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AvantGardener

5 oz wt (141 g)

Wash before enjoying.

BOX
TURTLE
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Arugula

5 oz wt (141 g)

Wash before enjoying.



- Spring Mix
20/80 – 40/60,
Brassicas/Lettuce
- Lettuce Party
100% lettuce
- Avant Gardener
15/85 – 40/60,
Arugula/Brassicas
- Arugula



Red Incised (Salanova)

Brentwood (Eazyleaf)

Red Sweet (Salanova)

Breen (High Mowing Mini Romaine)

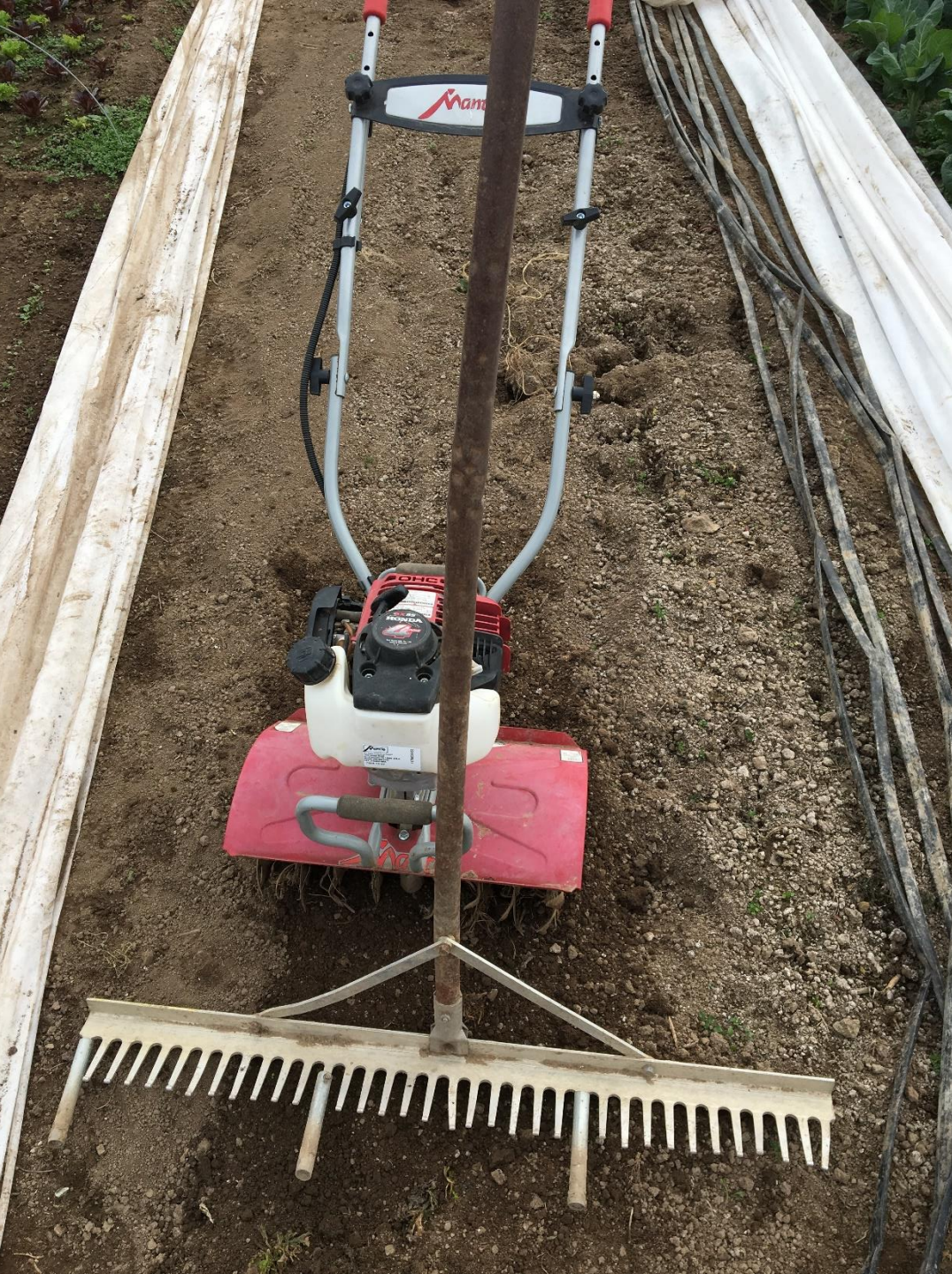
Buckley (Easyleaf)

Green Incised (Salanova)

Green Sweet (Salanova)

Ezrilla (Easyleaf)





Bed Prep

Mantis XP Tiller

- 34 pounds
- 16" wide
- Creates a fine seed bed
- \$600

36" Landscape rake

- Use the back to smooth the bed
- Conduit installed to create a planting grid

Lettuce Planting

For winter, plant in late September to early October
4"-10" depending on variety and weed pressure

- 4" for mini romaines
- 6" for most reds
- 6"-10" for Ezrilla and Green Sweet

Wider spacing for warm weather





Interplant varieties to efficiently use your space.



Lettuce Cultivation

Stale seed bed

Flame weed

Collinear Hoe

- Easily goes under lettuces and drip tape

Lettuce Harvest

- Multiple cuts from one-cut varieties
- Keep knives clean for disease control
- Cut stems short. If left too long, old brown stems end up in the next harvest
- Don't cut the core!
- Three cuttings in deep winter; more cuttings in early spring



Baby Greens

14 days summer 50 days winter



Red Russian Kale

White Stemmed Pac Choy

Mizuna

Vivid Choi Pac Choy

Purple Mizuna

Tokyo Bekana



Johnny's Four-Row Pinpoint Seeder

- Red Russian Kale – fill every hopper, third largest seed hole
- Arugula – fill every other hopper, smallest seed hole
- All other brassicas – fill every other hopper, second smallest hole





Greens Cultivation

- Stale seed bed
- Flame Weed
Weed Dragon 100,000 btu torch
- Tine rake post harvest

Greens Cultivation

Narrow Collinear Hoe



Standard Collinear Hoe Turned On Edge





Proteknet keeps weed seeds, aphids and flea beetles out.

Only last one year

Requires extra ventilation

Keeps beneficial insects in



Harvest

- First cutting – 3.5 ounces per square foot
- Additional cuttings – 2 ounces per square foot
- Quality declines and labor goes up with each additional harvest.





Row Cover

Pro-34 Agribon

- One layer for teens
- Two layers for single digits
- Ventilate



Pests

Wireworms – click beetle larva

- Larva can persist in the soil for years
- Primarily feed on roots of grasses
- Can also feed on lettuce roots

Drenching transplants in Spinosad has been effective in controlling wire worms.



Aphids

- Reduce yield, spread disease, and weaken lettuce's ability to withstand freezing
- Black sooty mold grows on aphid "honeydew".

Ladybugs are the best prevention.

We use insecticidal soap for control. It must be reapplied three days after initial application.

Populations grow fast. Early control is key.



Powdery Mildew

- Powdery mildew can damage leaves and stunt growth
- Good airflow and dry leaves are the best prevention

We control with hydrogen dioxide;
Oxidate or PERpose Plus



Sclerotinia (white mold)

- Sclerotinia is a persistent fungus that loves cool, wet soils
- The white mold is hyphae. Mycelium will form into dense sclerotia that resemble mouse droppings. Sclerotia can survive in soil for years.

Solarization kills sclerotinia – SARE Project LS06-185 “Biofumigation for soil health in organic high tunnel and conventional field vegetable production systems”

Drying Greens

- Stripped down washing machines are great budget dryers.
- Remove the outer shell of the washer and agitator, utilize original controls.
- Baskets are food grade. Cut a hole in the bottom, install a toilet flange and pvc pipe to fit over agitator post.
- YouTube tutorials available.





Packaging


Water-resistant front label: \$0.04

9x12 1.2 mil bags: \$0.05

Ingredient/Lot label: \$0.01

12" Impulse Sealer: \$40

Dymo Thermal Printer: \$65



**BOX
TURTLE
FARM**

USDA
ORGANIC

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SPRING MIX

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Summer Production

- Suspend row cover over plants when transplanted for shade.
- Clip cover up on the hoops for maximum airflow
- Remove the cover for a few hours a day until they can go without.



- Partial shade is needed midday. Cucumbers provide shade in this house.
- In our north/south oriented tunnels, we install 50% shade cloth along the ridge. The shade cloth only covers 2/3rds of the width of the tunnel. Plants get full morning and evening sun.

