

# **Farm Innovations**

**To Save Time and  
Money, Reduce Stress,  
and Produce More**

**Bryan Hager, Crager Hager Farm**

# Coolbot turns window A/C unit into a room refrigerator



# Spinning greens dry in clothes washer



# Durable Tomato Cages

**# 6 concrete reinforcing wire**

**2 feet diameter**

**5 feet tall**

**Staple at bottom**

**Tension wire between T- posts on top**

How to Grow World

Record Tomatoes, by

Charles Wilbur



# T-post tools



**Driver**

**Puller**

# Weeding

**Wheel hoe**

**Stick hoes  
with long  
handles to  
reduce back  
bending**



# Weeding

**Stirrup  
Hoe**

**Co-linear  
hoe**

**Diamond  
hoe**

**Sawz-all  
blade**



Carry file to keep them sharp

# Cutting

**Wood ax**

**Scythe  
(Johnnys)**

**Broad ax**



**Handle repair with nylon string and epoxy**



# Planting



# Planting

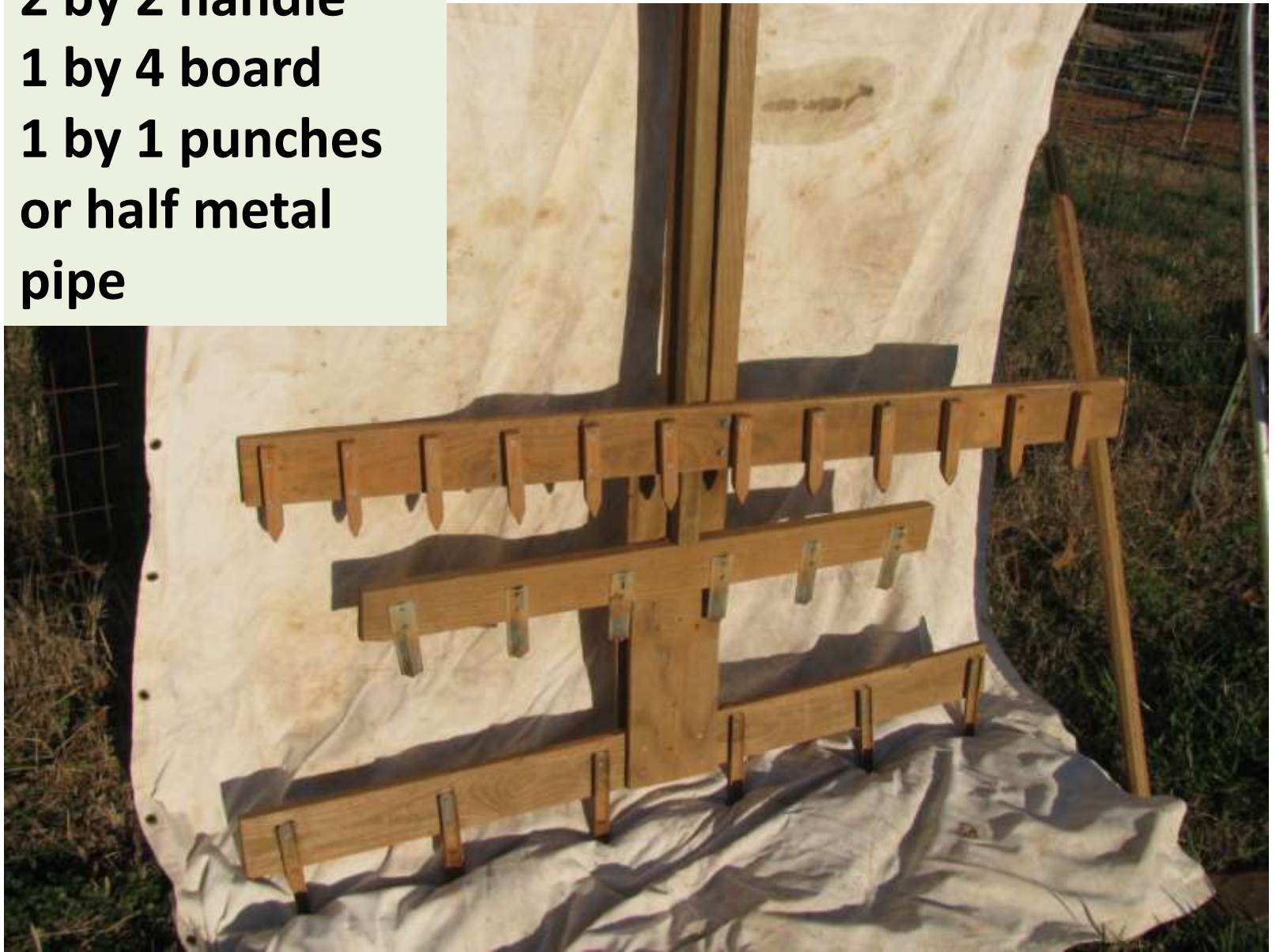
**12 inch  
metal duct  
over wood  
frame**

**Dibbles  
made from  
 $\frac{3}{4}$  inch  
metal  
conduit**



# Planting

**2 by 2 handle**  
**1 by 4 board**  
**1 by 1 punches**  
**or half metal**  
**pipe**



# Seeding



# Vacuum Seeder

**1 by 4 frame  
Plywood back  
1/8 inch plexiglas  
1/8 inch groove  
small vacuum  
cleaner**

**Box should fit  
neatly on top of  
your seed trays**

**Put seed tray on top  
of plexi and use  
permanent marker  
to make spot  
through hole in  
bottom of cells.**



# Waterbed for warming seedlings

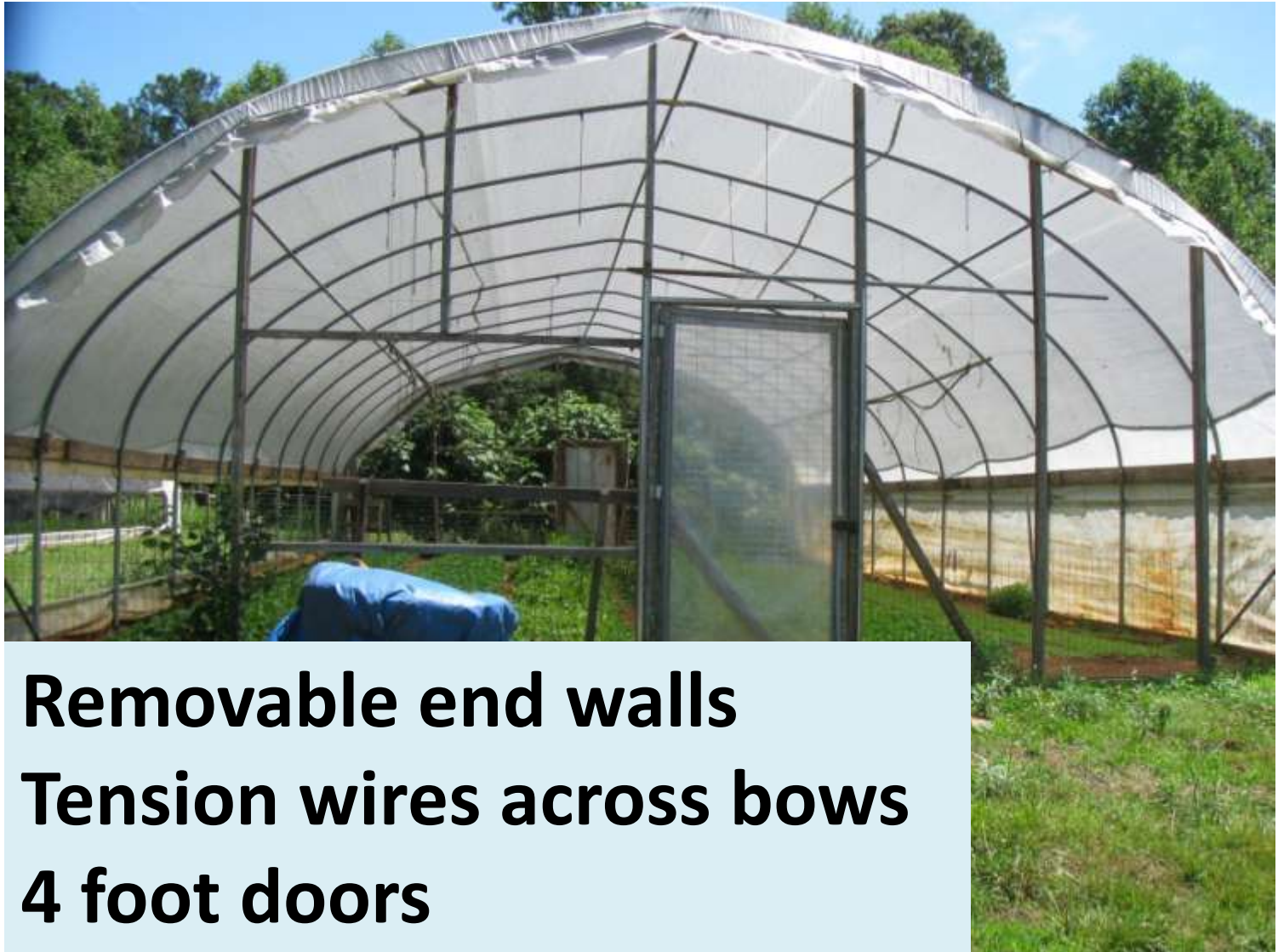


# Water bed with enclosure

Healing chamber and for starting delicate crops



# Hoophouse tweaks



**Removable end walls**  
**Tension wires across bows**  
**4 foot doors**



# Gutters at Top or Bottom of Sidewalls



# Harvest Cart



# Harvest cart

**Frame is 12 inches by 48 inches**

**Made with 5/4 by 4 boards**

**7 inch lawn mower wheels with 1/2 inch bolts**





# Root Cellar made with bags of dirt





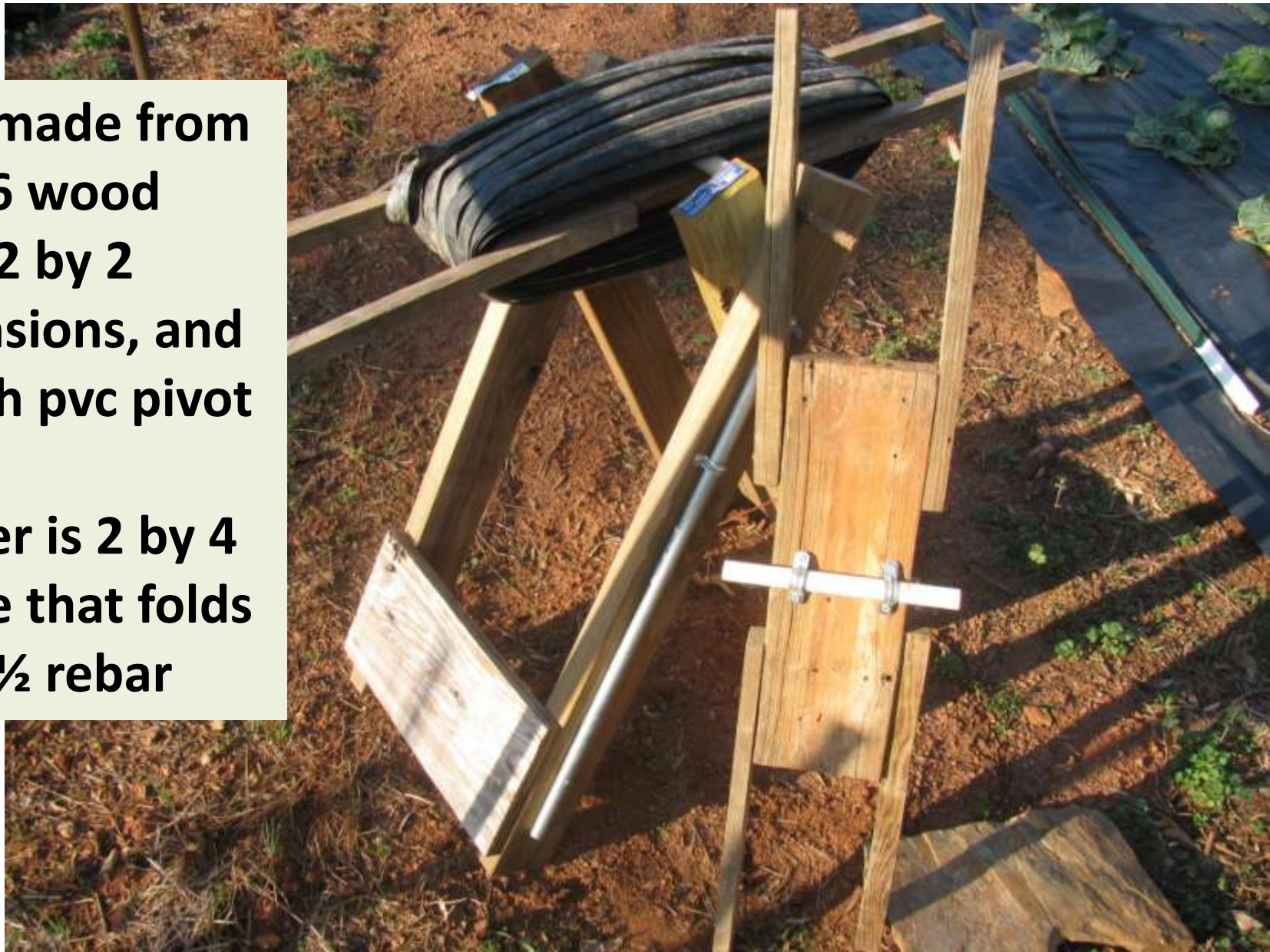
**Search term: earth bag construction**



# Drip tape reel and holder

Reel made from  
2 by 6 wood  
with 2 by 2  
extensions, and  
 $\frac{1}{2}$  inch pvc pivot

Holder is 2 by 4  
frame that folds  
with  $\frac{1}{2}$  rebar





**Repair cooler handles  
with sections of  
fiberglass fencing rod  
glued into sides**



**Repair hinges and  
put Gorilla Glue in  
screw holes**

# Issue: creating a

➤ **no-till**

➤ **organic**

➤ **vegetable**

➤ **farming system**

# My answer: Landscape Fabric



# Landscape Fabric

**Kills cover crops without herbicide**

**Controls most weeds**

**Manages moisture**

**Allows air infiltration**

**Keeps produce clean**


**Worms love it and so do mice**

**Works best with raised bed systems**


**Landscape fabric can be used with almost any above ground crop**







**Field after landscape fabric was removed. Manure, lime and cover crop seed were spread then it was packed by driving over with tractor and tiller disengaged. No tilling and almost no weeding required.**

A photograph of a green field with a blue pond in the background and a line of trees. The text is overlaid on the image.

**Cover crop is grown through the winter. In spring cover is mowed short and landscape fabric with no holes is laid over field to kill cover through occultation.**



**After 1 or more months  
the blank fabric is  
removed and fabric  
with appropriate hole  
spacing is laid on beds.**



**Fabric should be overlapped at least 6 inches. Fabric is held down with 8 inch metal staples. In windy places staples over sections of rebar helps to prevent the staples from wiggling loose.**





**Landscape fabric reel.  
Much easier than folding or rolling  
along the ground**



**Reel is made with 1.3 inch metal tube (chain link fence top rail)  
Wooden handle is bolted to metal tube.  
Brackets for metal tube are made from 1.25 pvc "T" with top cut out, then set into 2 by 4 that is clamped to sawhorse.**



**You can replace cardboard tubes the fabric comes on with pvc pipe that is 12 inches longer than cardboard tube, or you can extend tube. The pvc pipe extending past the fabric has a ½ inch hole drilled through it to accept a bolt to attached it to metal tube.**



**3/8 " bolt  
holding  
fabric tube  
to metal  
pipe |**



**Tools needed: Stapler to attached fabric to tube and itself on rolls. Fencing tool to pull and hammer staples. 8" metal staples. Fabric stapler to join fabric. Sharp knife.**





**Burn holes with a small propane torch. In field we use parts of metal cans attached to 2 by 2 poles.**



**Plywood works well for jigs to help with burning holes in fabric.**



**This jig hangs  
on a rack  
that holds a  
roll of fabric  
above and an  
empty tube  
below**



Landscape fabric

Buy 3.0 oz or heavier fabric with UV  
block

Sources:

[landmsupplyco.com](http://landmsupplyco.com)

[berryhilldrip.com](http://berryhilldrip.com)

Fabric stapler from Salco

**Your innovations**

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