

# Building A Walk-In Caterpillar Tunnel

## Background & Benefits

Caterpillar tunnels are an inexpensive alternative to typical high tunnels, costing about 1/4 of the price to cover the same amount of area. These walk-in structures require little environmental modification and can be constructed almost anywhere on your farm (Image 1). A benefit for farmers is that caterpillar tunnels are variable in size and can be used to cover up to four beds and be 300 ft. or more in length depending on bed size. Caterpillar tunnels can be used to grow a variety of vegetable crops, cut flowers, and hemp.



*Image 1. Caterpillars at Windflower Farm, Valley Falls, NY*

## Construction

- Bows can be PVC pipe, electrical conduit, or galvanized steel hoops and they are slipped onto ground stakes, made of rebar or tubular steel, spaced 6-10 ft. apart depending on the site's wind exposure (Image 2).
- A heavy-duty ground anchor should be placed at both gable ends of the structure, about 6 ft. past the last hoop (where the extra plastic will be bunched and tied down).
- At this point the structure is fairly loose, since most of the support will come from the cover over the caterpillar. The type of cover used should reflect the intended use of the structure.



*Image 2. PVC bows placed on ground stakes spaced 6' apart*

Farmers may choose to use greenhouse plastic, Tyvar, or shade cloth.

- Cover is held in place by 1/4" rope attached to anchors or ground stakes and drawn over the top of the caterpillar. The width of the cover should leave about 2 ft. of loose material on both sides. The extra plastic at the ends is bunched up and tied with 1/4" rope then secured to the heavy duty anchors (Image 3).
- The sides can be pushed up and secured with clamps, ropes, or 'Y' shaped props for a quick drop down in the evening or rolled up *inward* (to prevent water from collecting) for ventilation once temperatures are warm enough (Image 4).



*Image 3. Extra plastic bunched and tied down with rope to a heavy duty ground anchor*



*Image 4. Extra rope on bow to hold up plastic for ventilation*

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# Cost of Construction

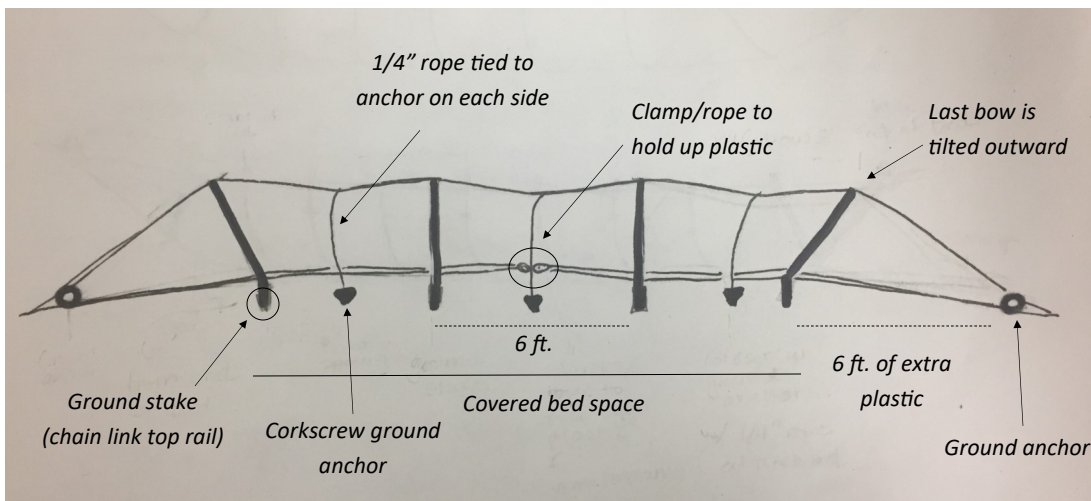
10 ft x 200 ft caterpillar tunnel with PVC bows and greenhouse film cover  
(Borderview Research Farm, Alburgh, VT)

Materials	Source	Description	Quantity	Price	Total cost
Anchors	FarmTek	Ground stakes - multi purpose, 18" corkscrew ground stake (placed every 6ft on each side)	70 ct.	\$5.95 ea.	\$416.50
		Auger Earth Anchor (on each gable end)	2 ct.	\$11.41 ea.	\$22.82
		0.5" x 30" x 4"			
Hoops	F.W. Webb	Commodity plastic pipe P/P112DNV White PVC 1.5" x 20' 540 PE	35 ct.	\$10.20 ea.	\$357.00
Tie-downs	ULINE	1/4" x 500' white solid braid nylon			
		Nylon rope	2 ct.	\$43.00 ea.	\$86.00
Ground stakes	Hardware Store	1-3/8" x 10' 6" chain link top rail (cut into 30" pieces)	18 ct.	\$13.99 ea.	\$251.82
Plastic	Agriculture Solutions	Sun Selector UVA clear greenhouse film - 6 mil (24' W x 240' L)	5760 sq. ft.	\$0.10 sq. ft.	\$576.00
Total cost of materials					\$1,710.14
Price per square foot					\$0.86

- *There has been growing interest in using a caterpillar tunnel for growing CBD hemp.*
- *Additional blackout cover on the structure could provide the ability for light deprivation practices for the hemp inside.*



*Materials for one 10' x 200' caterpillar tunnel (6' bow spacing). Quantities include additional materials for an effective covered area of 2000 sq. ft. and accounts for potential mishaps for broken materials during construction.*



**Image 5. Drawing of a caterpillar high-tunnel based on the structure built at Borderview Research Farm, Alburgh, VT. Description of materials and cost of production provided in the table above.**

## Links to company websites:

<https://www.farmtek.com/farm/supplies/home>

<https://www.fwwebb.com/>

<https://www.uline.com/>

<https://www.agriculturesolutions.com/>

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