

Engine-Powered Gopher Killing Machine

Pumping engine exhaust fumes underground to kill gophers, woodchucks, and other burrowing pests is a lot easier with this simple new device.

The "Predator Gopher Killer" comes with an insulated handle and uses a small 3 hp. 4-cycle gas engine mounted above an inverted 14-in. dia. steel pan, to kill rodents with carbon monoxide. You just set the pan on top of the gopher hole and start the engine to fill the pan with exhaust. The exhaust is delivered up to 300 ft. away into rodent dens and runways.

"It's simple to use, very effective, and affordable," says inventor Steve Raguse. "It runs quiet and weighs less than 30 lbs., which makes it easy to move from hole to hole. It'll cover a 2,500 sq. ft. area around the engine. We recommend running the engine for 15 to 20 min. per hole.

"I made my first model back in the 1980's for a friend who had a gopher problem in his back yard. I mounted an old lawn

mower engine on an inverted 5-gal. metal pail. The 3 hp. engine put out 15 to 20 lbs. of exhaust pressure which penetrated underground passageways. It worked great and he eliminated the rodents in his back yard.

"Then a few months ago a friend bought a house and her lawn was infested with gopher holes and dens which had been taken over by snakes. I remembered the first gopher killer I made, so I bought new parts and made this model to take care of her snake problem. We spent an entire day moving the unit from gopher hole to gopher hole, leaving the engine idling over each hole for 15 to 20 min. It did an amazing job of exterminating the snakes. My friend's neighbors also used it on their yards with good results, so I decided to make some units to sell.

"Many Louisiana fish farms are being invaded with muskrats and are using the Predator to protect their ponds."

He says the unit purposely does not use a



"Predator Gopher Killer" uses a 3 hp., 4-cycle gas engine mounted above an inverted steel pan to kill rodents with carbon monoxide.

tube to blow concentrated smoke down into the hole. "The trick is to put carbon monoxide into the tunnel system so that it settles by itself. The Predator puts out about 20 lbs. of pressure, and since carbon monoxide is heavier than air it sneaks up on the rodents and puts them to sleep before they have time to react. There's no big cloud of smoke to drive them away. The engine is quiet and you can let it run by itself and walk away while

you do other stuff."

The Predator sells for \$495 with free shipping.

You can check out a video of the Predator at FARMSHOW.COM

Contact: FARM SHOW Followup, Steve Raguse, 6978 CR 16, Wheaton, Minn. 56296 (ph 320 815-0865; www.predatorgopherkiller.com; raguse@traversenet.com).

"Climate Battery" Controls Greenhouse Heat And Humidity

Jerome Osentowski sees no reason to vent heat and humidity out of his greenhouses when he can charge up his "climate battery" instead. By blowing hot, humid air into the cool soil beneath his greenhouses, the heat and humidity are released. The air cools, and by the time it returns to the greenhouse, it is cooler and drier.

As hot air hits the cool pipes in the soil, a phase change occurs as the humid air condenses into moisture inside the pipes.

"Phase changes produce a geometric increase in the release of heat into the thermal mass of the soil," says Osentowski.

Later, that heat is released to the greenhouses, which are set at 7,200 ft. Cool air from the greenhouse is blown into the same pipes, picks up heat from the soil, and returns to warm the greenhouse.

Osentowski compares the climate battery to a refrigeration system that moves heat from one place to another. With the correct design, a 1,200-sq. ft. greenhouse requires the equivalent equipment and running costs

of a household refrigerator.

It is a system that Osentowski, along with his partner, architect Michael Thompson, has developed and spread through their firm Eco Systems Design.

"We did a simple one in the beginning and constantly updated as we built new greenhouses," says Osentowski. "Working with Michael, we have developed the technology to industrial scale. It is now being used in huge, commercial greenhouses."

In his book "The Forest Garden Greenhouse", Osentowski describes the use of temperature and humidity sensors to calculate the heat stored in the soil. He also explains how to measure the discharge rate in the face of winter cold.

Available from Chelsea Green Publishing, (ph 800 639-4099), the book outlines the history, design and mechanics of the Climate Battery.

Contact: FARM SHOW Followup, Eco Systems Design, Inc., P.O. Box 631, Basalt, Colo. 81621 (ph 970 927-4158; jerome@



Climate Battery blows hot, humid air through pipes and into the cool soil beneath a greenhouse, where heat and humidity are released. By the time the air returns to the greenhouse it's cooler and drier.

crmp.org; www.ecosystems-design.com) or

St., Suite 120, White River Junction, Vt. 05001 (ph 800 639-4099).

Tuff-bilt Tractors Back On The Market

A favorite small tractor for market gardeners and hobby farmers alike is back on the market and better than ever. Equipped with fuel injection on the gas model, the Tuff-bilt tractor is also available with a diesel engine. The 18 hp, high visibility tractor was on the market from 1975 until 1989, off until 2005 and then on again until 2015.

"We bought the company at the end of 2015, but didn't bring out a new tractor until June of 2016," says John Grolmus, co-owner, Tuff-bilt. "While it is the same basic tractor, we've made some cosmetic and mechanical improvements, beefing up lift points and switching to electronic fuel injection (EFI)."

Grolmus notes that the EFI eliminates concerns about ethanol gumming up the carburetor when the tractor sits too long. He adds that the EFI version is also easier to maintain and operate and saves an estimated \$300 per year compared to carbureted version.

"A major change made by the previous owner was going from the old 3-speed transmission to a hydrostatic," says Grolmus. "That let us extend the floor boards for more leg room."

Other changes include introducing a wide track model. "The standard width is 44 in., but we just came out with a 60-in. track width," he says. "Initially it is available only

as a gas tractor. There are a growing number of customers trying to work double beds. They needed a wider spacing."

Meeting customer needs is what the company is all about. That was the genesis of the tracks option. "Initially we introduced it for countries like Haiti, where debris and slopes are a problem," says Grolmus. "However, we've had a huge reaction from people concerned with compaction, especially in wetter soils. It is great for boggy soils and rice production."

The company turned to Mattracks, a Minnesota company, to develop the rear wheel replacements. The units are similar to those sold for 4-WD equipment and feature sealed bearings and polycarbonate rollers with highway rated treads.

"Virtually all the mechanical parts fit tractors going back to the 1970's, and we've been shipping parts all over the country," says Grolmus. "We have all the bearings, axles and seals needed for repair or restoration. Some tractors had been down for a year or more, and we were able to overnight parts to get them back up and running."

Grolmus describes the tractor as simple and basic without frills. In addition to more than 20 attachments and accessories, it can be used with any Cat. 0, 3-pt. attachments.

The K18-44-EFI with a 19 hp. Kohler gas



Tuff-bilt tractor can be powered by either a fuel-injected gas engine or a diesel engine.

engine is priced at \$12,750. The H21-44 with a 19 hp. Hatz diesel has a base price of \$19,995. Most implements, other than the belly mower and rear mulch layer, are priced between \$200 and \$500. The track conversion adds \$5,000 in cost.

"You can get a nice system for \$16,000," says Grolmus. "We are adding new implements all the time."

Contact: FARM SHOW Followup, Tuff-bilt Tractor Manufacturing, 2801 I Ave, Walthill, Neb. 68067 (ph 402 846-5760; toll free 844 486-3268; info@tuff-bilt.com; www.tuff-bilt.com).



Tractor is also available with tracks.