

# THIS IS MY JOB

× ALGAE FARMER

JES SPROUSE  
LOCATION SPRING GROVE, VA.  
AGE 36  
YEARS ON JOB 2



### 1. Raceway Pond

This 2000-square-foot, rubber-lined pond produces 25 pounds of dry algae a day. Rather than grow "designer" strains, Sprouse uses native algae. "We get seeding through the air and water," he says. Though his crop has lower energy-rich lipid content than genetically modified algae, it's easier to grow. Sprouse's long-term goal: Scale up to a 25-acre farm that would produce 14,000 pounds of dry algae per day.

### 2. Centrifuge

The algae solution enters as 99 percent water; it exits as 60 percent algae. Sprouse is designing a filter press that would use less energy.

### 3. Fertilizer Tanks

Sprouse uses two tanks—one full of diluted pig excrement, high in phosphorus and potassium, and one containing nitrogen-rich urea—to create fertilizer.

### 4. Algae Coal Oven

Algae paste is cooked for several hours, under pressure, inside this 55-gallon drum—producing granules that are non-water-soluble and can be stored outdoors. "It's a drop-in replacement for coal," he says. Unlike coal ash, algae ash contains no mercury or lead and can be applied to farm fields.

### 5. Harvester

Positioned at the terminus of the raceway, the harvester houses a pump that pulls water through filters, which extract a diluted algae solution. The water is then recycled to grow more algae. Sprouse invented the device.



When Jes Sprouse was a kid, he used to watch mile-long coal trains rumble across the Wyoming plains, headed for the power plants his ironworker father had helped to build. Now, he is in the energy business himself, but instead of coal he focuses on algae farming. So far, his operation is limited to a single pond in his front yard, but he's got big plans: to fuel America as a tycoon of algae pellets (for home use) and algae coal (for power plants). Both products yield 10,500 Btu per pound—nearly as much energy as bituminous coal. And they're a lot cleaner. "I've known for a long time that our path is unsustainable," he says. "Farming algae is environmentally driven, but I also want to make money." — PAUL TOLMÉ