



Sprayer rides on four 12 by 38 rear tractor wheels. The up-front cab came off a Deere 8820 combine.

## “Up And Down” Sprayer

(Continued from Page 1)

The sprayer rides on four 12 by 38 rear tractor wheels spaced 10 ft. apart. The up-front cab came off a Deere 8820 combine. A 1,000-gal. poly tank mounts behind the cab, followed by a 6-cyl. gas engine off an International 715 combine. The sprayer is fitted with a 60-ft. boom that runs across the center of the machine, between the tank and engine.

Litchfield used 4 by 6 box steel, 1/4 in. thick, to build the 22-ft. long, 4-ft. wide main frame.

The wheel assemblies attach to a pair of smaller frames made from 4-in. sq. box steel that mount underneath the main frame. The smaller frames pivot below the main frame, allowing them to turn for steering. A pair of cylinders are used to push and pull on the frames to turn.

The wheels are hydraulically-powered drive hubs off a Deere 4630 tractor. Litchfield cut out the centers of the wheels and welded in new centers that support the hubs. A pair of hydrostatic pumps taken from International 915 combines are used to power the drive hubs. A home-built gearbox drives the two pumps.

Here's how the sprayer is raised up or down. Each wheel mounts on a 7-in. sq. steel leg. Two pivoting, horizontal pipes run across the sprayer, one at front and one at back. The wheel legs fasten to these pipes.

A 24 by 4-in. hydraulic cylinder by each leg attaches to the pipe. As the cylinders are extended they rotate the pipe 1/4 turn, which causes the entire rig to move upward and rearward at the same time.

Nitrogen accumulators connected to the cylinders provide suspension. The cylinders are hooked together in a master slave arrangement which keeps the entire sprayer level as it's raised or lowered and also reduces tip, even if one of the wheels drops down 2 ft. or rises over a 2-ft. high obstacle.

“It took a lot of work but I like the results,” says Litchfield. “The design provides an exaggerated suspension that allows the 3 ft. of up and down movement. I mounted the hydrostatic control knob from a Deere 9000 combine inside the cab with the three rocker switches on it. One switch raises and lowers the sprayer and the other two fold the boom for transport.

“The solid upper frame allowed me to mount the tank in the middle of the machine, over the steering hinge point, for excellent weight distribution. On conventional articulated sprayers the tank has to mount behind the hinge point which keeps the weight unbalanced. The solid upper frame also allowed me to mount the boom in the center of the machine where it's more stable and doesn't bounce up and down as much as it would if it were mounted on back. I have a good view of it from the cab. I used 2-in. sq. steel tubing to build the boom. The articulated design lets me turn short at the end of the field.

“When I started building it I didn't plan to spend much money. I've spent more than I



Sprayer is raised up or down by two pivoting, horizontal pipes that run across sprayer, one at front and one at back. The wheel legs fasten to these pipes. A hydraulic cylinder by each leg attaches to pipe. As cylinders are extended they rotate pipe 1/4 turn, causing entire rig to move up and back at same time.



Lowering the sprayer to within 3 ft. of the ground eliminates a lot of climbing, says Litchfield. Note nitrogen accumulators connected to the cylinders at back.

wanted to, but not nearly as much as I would have for a commercial self-propelled sprayer which would cost up to \$100,000. I already had the combine engine and I bought the hydrostatic drives at a junk yard. I bought the cab used. It originally had a small door and window on the right side along with a built-in console. I cut out the right side of the cab and built a new frame for it, then bolted a door that's identical to the cab's left side door into the frame.”

The sprayer is equipped with 10 cylinders - four for suspension, two that push and pull

on the lower frames to provide articulated steering, and four that fold the boom.

Litchfield says he's not done building yet. “I plan to add an air conditioner and foam marker. I also plan to mount a tongue on front so I can pull the sprayer behind a truck and not have to haul it on a trailer. Because the sprayer goes up to 6 ft. high I'll be able to leave the tongue on in the field without damaging the crop.”

Contact: FARM SHOW Followup, Marshall Litchfield, 15340 N. 700th Rd., Macomb, Ill. 61455 (ph 309 254-3481).

## Red Sweet Corn Sold Out Fast

If you're looking to add some excitement to your garden, you don't have to look any farther than the amazing new red sweet corn introduced this year by W. Atlee Burpee & Co., Warminster, Penn.

Ruby Queen is a 75-day hybrid sweet corn with deep red kernels and it's going over big. “We had a limited supply for 1998 so we featured it in this year's catalog. But by mid winter it was already sold out,” says company representative Peggy DeLaurentis.

The ears are 8 in. long and colored a deep red that took five years for plant geneticists to develop. They started with pink-kerneled corn and went through 10 generations to achieve Ruby Queen's deep red.

Is the world ready for red sweet corn? “Absolutely,” says company president George Ball Jr., who notes that 100 years ago yellow colored sweet corn was revolutionary. Before that it had always been white. Yellow corn was considered suitable

Photo courtesy W. Atlee Burpee & Co.  
**New Ruby Queen hybrid sweet corn has deep red kernels.**

only for livestock, not humans. Then Burpee introduced Golden Bantam in 1902, the first yellow sweet corn.

Burpee says a larger supply of Ruby Queen will be available for the 1999 growing season.

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