

Rainguns as an Irrigation Option

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The raingun is a large capacity impact sprinkler, mounted on a sled, recoiled by a mechanically driven drum.

TYPES OF RAINGUN SPRINKLERS - TYPES OF DRIVING DEVICES

Gas and Diesel Powered— Driven by a gasoline or diesel powered engine.

Advantage:

- 1) Low initial cost

Disadvantages:

- 1) There is a great deal of mechanical equipment to maintain
- 2) One must be a mechanic to make certain it runs correctly.
- 3) Gasoline can be a hazard.
- 4) Need an experienced crew to operate (pouring gasoline into a hot engine is hazardous)

Diaphragm— This raingun uses a rubber diaphragm as a drive unit

Advantage:

- 1) Inexpensive to operate.

Disadvantage:

- 1) With all valve portings and valve assemblies, the maintenance can be high.

Turbine Driven— Driven by water from the irrigation system

Advantages:

- 1) Very portable.
- 2) No mechanical operation.
- 3) One person operation.
- 4) Works best, with fewer problems.

Disadvantage:

- 1) After three years of use, we have had no repairs and no complaints.

APPLICATIONS

Rainguns have a gpm (gallons per minute) range of approximately 100 to 500 gal under correct pressure. We are operating 120 lb at the gun. The water atomizes well enough so that the raingun could be used over small transplants. There is some splashing effect, but it is minimal.

Pulling across the field, we are applying approximately one inch of water and have the ability of covering around six acres a day with the T65 Bauer raingun that we own. The Bauer T65 gun covers a path 200 ft wide and approximately 800 to 900 ft long.

SETTING UP THE NURSERY FOR A RAINGUN

- 1) We have a 10 ft row every 200 ft at standpipe.
- 2) Our rows run 600 to 700 ft long.
- 3) We run 100 gpm at 120 lb pressure.

Water Supply. Adjustments may have to be made on an old and/or existing system. At our nursery, we have buried 4 in. mains which require about 150 to 160 lb at the source of the water, and the pipe we have is 125 lb operating pressure. During the initial setup, we experienced pipe splitting and eruptions.

If you do not have a water source of this capacity, there are tractor driven booster pumps that can be put at the gun. This method works, but it takes more time and energy to set up.

Time and Money. Setting water everyday, using aluminum pipe, took a crew of four men, approximately four hours a day. Using the raingun, setting water each day, now takes one man, one hour a day to set the gun twice a day. The amount of time we save is enough to offset the cost of the raingun if one amortizes it over the next five or six years. It will pay for itself, not even considering the relief from setting aluminum pipe.

CONCLUSIONS

Most likely we will never again use aluminum pipe on field stock. The raingun has been a great investment and has served our water needs well. This in no way means it will have the same value to every nursery situation. I don't think it applies to container stock as it would have to be physically set up to operate and the water force may knock over small container stock. If you are considering a change in your irrigation practices, you should at least consider the raingun.