



Biocontrol Nematode Center Pivot Application Guide

Center Pivot Preparation

- A 275-gal tote needs to be thoroughly rinsed out in preparation to be filled with a water solution containing biocontrol nematodes.
- Plumbing needs to be available to hook up the tote to the high-volume injector pump. Typical settings on the injector pump are in the range of 15-25 gal / hr.
- Biocontrol nematodes will be applied in 0.20 – 0.25” of water. This amount of water is typical of running the pivot at 100%.
- The time required for the pivot to complete the circle at the water application rate needs to be known (typical 14-18 hours).
- Any filters or screens in the injector pump need to be removed.
- Biocontrol nematodes need to be injected at the base of the pivot to limit their time in the application water which is a low oxygen environment.
- During the biocontrol nematode application, the nematode solution needs to be aerated with a 110v air pump, so 110v needs to be available at the pivot.

Delivery of biocontrol nematodes

- Schedule for delivery of biocontrol nematodes (total acres and delivery dates) will be determined in advance and coordinated with the customer.
- Nematodes will be delivered to the farm in a liquid concentration. The standard concentration is 1 gal / 5 acres ordered.
- Persistent Biocontrol will pump the nematode liquid solution into the grower provided tank and dilute it as needed. Storing nematodes in additional water improves long term survivability.
- Pump and aeration stones used to bubble liquid concentration will be provided.
- Bubbling of nematodes in liquid provides 28 days of shelf life. Tank must be stored in a covered area out of direct sunlight.



Application of biocontrol nematodes

Calculation of the biocontrol nematode concentration for application and the injector pump volume are as follows:

The first value we need is the time for the pivot to make a complete circle. For the example calculation we will use the following figures.

- Pivot acreage = 140 acres
- 14 hours are required for a single complete circuit.
- Therefore, $140 \text{ ac} / 14 \text{ hours} = 10 \text{ acres}$ are covered every hour.

To calculate the setting on the injector pump, we divide the tank volume (275 gal) by the time for a single complete circuit (14 hours)

- $275 \text{ gal} / 14 \text{ hours} = 20 \text{ gal/hr.}$
- This figure tells us we need enough biocontrol nematodes for 10 acres in 20 gallons of solution to be injected every hour.
- Since we have decided to use an entire 275 gal (tote capacity) for the application, the proper amount of concentrated biocontrol nematode solution will be pumped into the tote upon delivery and then the tote will be filled with water to the 275-gal level.
- **The biocontrol nematode solution needs to be bubbled/aeriated during the entire application process. This requires some way to power the air pump which runs on 110 v.**

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