KIWI POLLEN SPRAYER® USER GUIDE

Kiwi Pollen Sprayer®

The Kiwi Pollen Sprayer® has been designed specifically for Kiwifruit pollen spraying. It is a light-weight, portable, battery powered unit, utilising the airshear application technique of introducing a premixed solution of PollenAid® and male Kiwifruit pollen to female kiwifruit flowers via a directed, fine mist.

Contents

1 x Kiwi Pollen Sprayer
1 x Smart Charger IE 06/025C
3 x 10A 6V Sealed Lead-acid Batteries
1 x Kiwi Pollen Sprayer User Guide

Conditions of Use

The Kiwi Pollen Sprayer® is warranted for use only in the application of Kiwifruit pollen using the PollenAid® system.

PRODUCT WARRANTY
Kiwi Pollen guarantees that each new Kiwi Pollen Sprayer® is built of quality materials and that it is free of defects in material and/or workmanship for a period of 12 months following purchase. We undertake to exchange or repair free of charge within this period any part found to be defective due to a manufacturing fault.

Kiwi Pollen is not liable for incidental or consequential damage, labour or expense incurred arising from the use of it's product.

As the use and maintenance of the lead-acid batteries by the purchaser cannot be monitored, no warranty is expressed or implied other than that carried by the battery manufacturer.

Use of the Kiwi Pollen Sprayer® or any of it's components for purposes other than the application of Kiwifruit Pollen as indicated in this manual is not covered under this warranty.

Cleaning and Hygiene

Problems can arise as a result of poor maintenance and cleaning. PollenAid® solution left to dry in the tank and lines can solidify and cause nozzle blockage. Further, if left uncleaned for a day the odour of dry pollen becomes unpleasant.

After use, rinse all surfaces that come in contact with Pollen / PollenAid® with deionised water only. External surfaces of your Kiwi Pollen Sprayer® may be cleaned with a neutral detergent and warm water.

Assembly Instructions

- Insert freshly charged battery into its compartment, locate with Velcro® straps and connect red and black coloured alligator clips to corresponding battery terminals.

- Attach the air (5mm) and solution (4mm) nylon hoses between the sprayer unit and hand-gun by firmly pressing hoses into their respective sized housings.

Hoses may be removed by pressing, with two fingers on the "collet" and gently pulling the hose with the other hand.

Place unit on shoulders and adjust straps for comfort.

Sprayer Operation

Start-up and end of use operation:

- Open tank lid and fill sprayer with a quarter litre of deionised water. Seal tank firmly with lid. Switch the sprayer on and operate the hand-gun. The water will take some seconds to appear as it fills internal fluid lines.
- Inspect spray pattern emitted from the airshear nozzle. (Note correct pressure is indicated by a continuous, fine mist of even droplet size, emitting a 45° - 55° spray pattern).
- Continue until tank is emptied then switch off.
- Detach spray gun hoses from the sprayer, hold one finger over the air outlet and switch sprayer on once more. Operate until all remaining fluid is flushed from the internal fluid line.
- After use, remove airshear nozzle from hand gun and wash both in deionised water.
- Remove battery or detach battery leads when not in use.
- Store the Kiwi Pollen Sprayer® out of direct sunlight.
- Following this procedure before and after each use of the sprayer will ensure trouble free operation.
- Spraying:
- Load tank with 1-2 litres of pre-mixed Pollen-PollenAid® solution.
- Seal lid firmly
- Switch sprayer on, wait 1-2 minutes for pressure to develop and fluid to fill line. DO NOT block or cover nozzle outlet. This could over-pressurise the tank and will affect nozzle discharge rate.
- Direct nozzle at open flowers.
- Operate hand gun.
- Switch sprayer off between tank fills to conserve battery charge.
- Continue spraying for up to four hours or until a noticeable drop in pressure occurs, whichever the sooner, then replace existing battery with second battery supplied.
- Disconnect battery when not in use.

Batteries

Three sealed, low-maintenance, lead-acid batteries are included with your Kiwi Pollen Sprayer® purchase.

These batteries were selected for their low-maintenance and high recovery rate characteristics, if over-discharged. During their expected four year float service life there is no need to inspect the electrolyte or add water. In fact, there is no provision for these maintenance functions.

Attention to battery discharge level is important. The level of discharge will alter depending on the amount of time the sprayer is continuously operated. If the battery is used for a period greater than 4 hours, re-charging time increases dramatically.

DO NOT exceed 3 hours use before re-charging battery.

If it is intended to operate your Kiwi Pollen Sprayer® for more than three, three hour periods per day, the first battery will need to be recharged immediately. (see Battery Charger directions for use page 8).

Maintenance of battery

At room temperature (20°c) the self-discharge rate of the battery is approximately 3% of rated capacity, per moth. The higher the storage temperature, the shorter the shelf life. While the battery can be stored for up to one year without loss of efficiency or deterioration of battery performance at ambient temperatures, it is recommended that a four monthly "top up" charge is given to maintain batteries at full charge.

ALWAYS store battery in a dry, cool place.

Give battery "top up" charge every 4 months.

Battery charger

The sealed, lead-acid, Smart Charger included with your purchase is designed specifically for use with the sealed, low maintenance, lead-acid batteries provided.

DO NOT use any other battery charger for the re-charging of these batteries

DO NOT charge any other type of battery on this type of charger

The charger delivers a near constant input charge current (3A) until the battery charge level reaches approximately 90% full. At this point the charger reduces the average charge current by commencing an on-off modulation of the output with a gradually decreasing charge/rest ratio.

The LED indicator signals this operation by being illuminated RED when charging is occurring and GREEN when in rest state. In normal circumstances the battery may be left connected to the charger in a "float mode" without risk of battery damage.

The Kiwi Pollen Charger will not withstand continuous reverse polarity connection to a fully charged battery. Momentary reverse connection will not cause damage and is indicated by the second LED indicator illuminating RED.

Continuous short circuiting will cause closedown under the control on the thermal protection device fitted. On removal of the overload and after a cooldown period, normal operation will resume.

Depending on the state of discharge (recommended, continuous battery usage before re-charging is 3 hours), each battery will require approx. 2 – 2.5 hours to re-charge.

Directions for use:

- Unplug charger.
- Connect one lead-acid battery to the charger with the colour co-ordinated alligator clips.

DO NOT connect black and red alligator clips to each other.

DO NOT connect two alligator clips to a single battery terminal at any time.

ALWAYS connect terminals before switching power on

- Confirm correct connection of battery by observing the 'Reverse polarity LED'

NO LIGHT = correct polarity
RED = incorrect polarity

- Plug charger into a 240v power source and switch mains on.
- Confirm state of battery re-charging by observing the 'Charge Indicator LED'

  RED = requires charging
  GREEN = fully charged

- When battery is fully charged, switch off the mains before removing the terminals.

- Depending on the state of discharge, a single battery connected to the charger will take 2 – 2.5 hours to recharge and two batteries connected to the charger will take 4 – 5 hours to recharge.

ALWAYS charge batteries in well ventilated area away from flammable liquids and gases.

DO NOT smoke around charging batteries.

Trouble Shooting

Problem: Compressor operates, but does not spray – try one of the following:

- restricted or disconnected fluid line? Remove 4mm solution hose from hand gun checking for solution flow, then re-insert 4mm nylon hose firmly into it's fittings
- disconnected air line? Re-insert 5mm nylon hose firmly into it's fittings
- blocked nozzle? With machine running, remove nozzle from hand gun, remove 5 mm elbow with hose attached from the nozzle. Direct air from elbow down nozzle outlet feeling for any restriction at the other end of the nozzle. If restriction cannot be removed with airflow, remove cap and inspect stainless steel nozzle for blockages,
- lid not sealed tightly? After running briefly, turn Kiwi Pollen Sprayer® off and listen for air leaking around lid. Reseal lid firmly.

Problem: Compressor fails to turn on – try one of the following:

- battery not plugged in or in discharged state? Check alligator clip contacts, then attach a fresh battery to the Kiwi Pollen Sprayer®.
- loose or faulty wire connection? Slip plastic sheaths on alligator clips back and check wire connection. Remove switch with fine nosed screwdriver and check soldered joints for contact.

PRODUCT SPECIFICATIONS

Overall Dimensions	285mm x 140mm x 290mm
Weight (with 2 litres of solution)	5.2 kilograms (approx.)
Maximum Tank Capacity	3 litres
Compressor maximum continuous pressure	7 p.s.i. (0.5kg f/cm²)
Average Current Demand	2.05A ±8%
Smart Charger IE 06/025C	6.9V ~ 3A

Battery	10A – 6V sealed lead-acid
Battery charge held	3 hours
Single battery recharging time	~2 – 2.5 hours
Two batteries recharging time	~ 4 – 5 hours

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