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## Food Grade Mineral Oil and Using Foggers - Korean Model

### Use Fogger with care:

- Use a respirator and wear protective gloves
- Avoid using the fogger in strong wind
- Do not use the fogger inside buildings
- Be careful when disposing of the butane cartridges. We recommend that you punch a hole in the cartridge before disposing of it.

### General Points

1. Before fitting the butane cartridge ensure that both the fitting on the fogger and the inside of the gas cartridge connection are “spotlessly clean.” The gas jets in the fogger are minutely small and the slightest hint of dust and dirt will block them.
2. Once the gas cartridge has been removed from the fogger, fit a cap over the butane cartridge to stop dust and dirt from entering the gas system.
3. The oil tank (FGMO) is to be kept completely free of contaminants and water to help prevent the build-up of carbon and deposits in the atomisation tube.
4. Always keep the fogger at least a hands width away from the hive entrance - approx 15cm or more.
5. Always keep the fogger level. If the fogger is pointed downwards, the liquid propane can escape downwards, and the fogger turns into a flame thrower.
6. If the fogger tip is too close to the hive entrance and the fumes ignite you will give yourself and the bees one heck of a fright; to the extent that the explosion can pop the lid off a hive. This may look impressive, but it upsets the bees.
7. Once lit you should let the fogger warm up for approx 1 - 2 minutes. The fog should be white. If the fog is a bluish colour, then you are burning the oil. EITHER wait for a bit or pump more oil, pointing the fogger away from the hive, until it turns white again. Blue fog is not what you need to go into the hive to coat the bees and destroy the varroa. The droplets are 15 microns, big enough not to harm the bees, but the oil coats the spiracles of the Varroa, and they die by suffocation.
8. The Butane cartridges are readily available from hardware/plumbing supply firms, or you can get them from us.
9. From time to time the fogger tip and end piping will need cleaning. The easiest way is to unscrew the tip and feed some frame wire up the end of the piping as far as you can. Place the oil pump part in HOT water and pump the hot water through the fogger to clear out any oil residue and carbon build up. Once the water flows easily then the fogger is ready to use again. Screw the tip back on and go to work.

10. Replacement parts can be obtained, but often it is quicker and cheaper to purchase another fogger. Sometimes the gas passageways also block.
11. After prolonged use, say several years, the plastic around the oil and propane lines before the burner get charred and will burn out. We have found that repairs are not effective. The alternative would be to have a small heat shield in front of the plastic.
12. Foggers work best in calm conditions, although fortunately this Korean model will work well even in slightly more breezy conditions, but it is not recommended.
13. Make sure that the fogger is not bouncing around on the back of the truck or in your vehicle. They will bend and break, so a carry/storage box will prevent this from happening.
14. It is preferable to remove the Butane cartridge between apiaries or after each fogging because:
  - a. the cartridge puts a lot of strain on the fitting
  - b. if the cartridge is left on the fogger, the Butane can leak out and be a potential fire risk.
  - c. if the cartridge runs out and you do not have a spare cartridge with you, you cannot finish.
15. A little vaseline on the join, helps to get a good seal and makes it easier to take on and off.
16. It is a good idea to have a replacement butane cartridge and at least 1 litre of FGMO with you so that you do not run out halfway through a day's work.
17. Foggers can be used at any time of the year. They are a great help during December to March when there are honey flows.
18. When supplied the nozzle points downward which may cause problems. We have found that heating the pipe between the coil and the nozzle and straightening it so that the fog comes straight out is a good modification.
19. When using the fogger, it is only 4 seconds per hive, maybe up to 4 pumps, it will penetrate right through the hive, up to 4 boxes.
20. **Good Maintenance** and **Cleanliness** are critical to the life of your fogger.
21. Clean Fogger after Every Use.  
How to clean:
  - a) detach liquid container.
  - b) Ignite the unit and wait until it heats up.
  - c) Place the pump in water and then pump the trigger a few times until water vapour is coming through the nozzle.