

Protocol for Making Fly Food

Batch Size ->	Single	Double	Triple	Quadruple
Ingredients				
ddH ₂ O (l)	4.25	8.5	12.75	17
Molasses (g)	390	780	1170	1560
Carageenan (g)	27	54	81	108
Cornmeal (g)	245	490	735	980
Yeast (g)	50	100	150	200
Propionic acid (ml)	12	24	36	48
10% Methyl paraben (ml)	25	50	75	100

- 1.) In a large cooking vessel, measure out the water using a graduated cylinder and once three liters are in there, turn up the heat to low-medium. (Add 5% more water in the winter)
- 2.) Measure and pour molasses using a large beaker. Make sure there is none sticking to the beaker and mix till uniform.
- 3.) Measure carageenan using boat. Add it to the cooker slowly and stir constantly to avoid clumping.
- 4.) Measure cornmeal, add it to the cooker slowly and continue stirring. If you have an electronic mixer keep it on at low speeds to help avoid clumping otherwise continue stirring till you are sure there are no clumps.
- 5.) Measure and add yeast into a SEPARATE vessel/ beaker/ container. Pour 1-2 liters of water depending on the batch size and mix the yeast till it dissolves COMPLETELY. Then add the yeast slurry into the main cooking pot.

PLEASE ADD the *CARAGEENAN*, *CORNMEAL* & *YEAST* as SLOWLY as possible WITH CONSTANT STIRRING to AVOID CLUMPING. It is VERY inconvenient to break the clumps later.

- 6.) Remember to get all the sides clean, stir vigorously till the contents in the cooker look reasonably homogenous. **Stop mixing/ stirring** and turn up heat all the way. Check for bubbling (kind of simmering) at the sides and once you can see the bubbles, cover the cooker (with foil) and let it boil vigorously for 10-15 mins. Watch out for overflow due to boiling especially for large batches. **DO NOT MIX DURING THE BOILING PHASE.**
- 7.) Once it has boiled vigorously, cool the food by either turning the heat to the lowest (which we prefer) or turn it off. Leave the cover on for a while to avoid water loss **BUT STIR/ MIX** the food **INTERMITTENTLY** to avoid clumping and settling.

- 8.) While the food is cooling, please put the vial-pouring machine in the autoclave and turn the autoclave on. The idea is to heat the machine for a while to make pouring food into vials easy.
- 9.) Let the food cool to about 60 deg C. When it is ~60 deg C, prepare 10% Tegosept (Methyl paraben) solution in 95% (or 99%) Ethanol as per the table above. During the cooling period please arrange vials and/or bottles in the appropriate trays, so that they can be used as soon as the food cools down.
- 10.) When food reaches about 60 degrees, add the propionic acid and 10% tegosept to the food. Mix well and begin pouring.

Few tips for better food:

- 1) To avoid clumps:
 - When adding the ingredients add slowly and after EVERY addition stir rigorously till it is uniform.
 - Keep stirring on a regular basis although not continuously after all the ingredients have been added.These two steps are enough to ensure non-clumpy food
- 2) We have observed in the past that the fly food is a bit hard and after a few days it gets crusty and dry.
 - This usually happens when too much water escapes while cooking. So try not to let a lot of water evaporate while cooking. Cover the whole vessel with the foil and if you think its going to boil over then leave a teeny-tiny gap in the foil or periodically just open up a small hole on the edge to reduce the pressure.
- 3) Also the food at times seems to be elastic- meaning if we try to poke holes in the food there is resistance.
 - This can be a difficult for the larvae and combined with (2) can render the food almost unpalatable for them (they cannot burrow into the food). This is again in part due to too much water escaping and that corn flour may have gluten in it. If gluten is over-mixed/ stirred it may lead to kind of “elasticky” food. Try to mix the food in pulses and not constantly to correct for this. After adding all the ingredients mix the food for uniform consistency and then turn off the mixer. Then after a while if you find the food getting chunky mix it well for a bit. Turn the mixer off while boiling and then while cooling to about 60 deg C mix in pulses to maintain the consistency.