**Cornell Fly food**

Ingredients:

|  |  |  |
| --- | --- | --- |
| Agar | 2kg tub | Cat #BP1423-2, Fisher Scientific |
| Dextrose, Anhydrous | 10kg tub | Cat #D16-10, Fisher Scientific |
| Brewers Yeast | 25lbs tub | Cat # IC90331225 VWR (MP Biomedicals) |
| Sucrose | 25lbs tub | Cat # 902978 VWR (MP  Biomedicals) |
| Phosphoric acid, 85% | 2.5L bottle | Cat # A242SK-212, Fisher Scientific |
| Propionic acid | 2.5L bottle | Cat# AC149300025, Fisher Scientific (Acros Organics) |

Volumes:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Batch Size* | *1* | *2* | *3* | *4* | *5* | *6* | *7\*\** | *8* |
| *Water (L)* | *1.2* | *2.4* | *3.6* | *4.8* | *6* | *7.2* | *8.4* | *9.6* |
| *Agar (g)* | *12* | *24* | *36* | *48* | *60* | *72* | *84* | *96* |
| *Glucose (g)* | *100* | *200* | *300* | *400* | *500* | *600* | *700* | *800* |
| *Yeast (g)* | *100* | *200* | *300* | *400* | *500* | *600* | *700* | *800* |
| *Acid Mix (ml)* | *10* | *20* | *30* | *40* | *50* | *60* | *70* | *80* |

|  |  |  |
| --- | --- | --- |
| *Acid Stock solutions (each)* | *100* | *500* |
| *phosphoric acid (85%) (ml)* | *8.3* | *41.5* |
| *water for phosphoric(ml)* | *91.7* | *458.5* |
| *Propionic acid(ml)* | *83.6* | *418* |
| *water for propionic(ml)* | *16.4* | *82* |

* Store each of the Acid stock solutions separately and safely in glass bottles.
* Please use caution while handling the acids and use the appropriate handling protocols.
* Do not make more than 500ml (at the maximum) of the acid solution at any given time. The acid mixture needs to be as fresh as possible.

Acid Mix:

\*Mix equal amounts of both the acids to make up the Acid Mix.

i.e. if the recipe requires 10ml Acid mix, then mix 5ml of Phosphoric acid + 5ml of Propionic acid from the stock solutions into the fly food

Recipe/Directions:

Typical Usage:

- We typically need \*\*7X batch of this recipe every generation i.e. every 2-3 weeks.

Normal Fly food: -

1) For a given batch of fly food, mix the appropriate amounts of Agar, Dextrose and Yeast in the required volume of hot/ boiling water in a big pot. Make sure that all the ingredients have been mixed in well. The yeast may not dissolve completely, but needs to be relatively homogenous in the solution.

2) Cover the pot (lid/ aluminum foil) and heat with occasional stirring. Bring this mixture to a boil and boil for 10minutes or ~thrice i.e. when it boils, remove cover and stir till it goes down and then let it boil again. Do this a total of 3 times. PLEASE use extra caution at this step.

3) Remove from heat and cool to ~60 degree Celsius. Add the appropriate volume of Acid Mix\*; mix well.

High Sucrose Diet: -

5) After step (4), take out ~1.5L of food and add it to the blender

6) Weigh and add 202g of Sucrose to the food and blend on low for ~30 seconds till the sucrose is blended into the fly food

7) Wait till all the froth collects at the top and using a spatula, remove the froth and discard it.

FINAL STEP: -

8) Pour both the normal food and high sugar food into bottles (~55-60mL each). Cover and plug when cool and solidified. MAKE SURE to label the high sucrose bottles and keep them separate.