

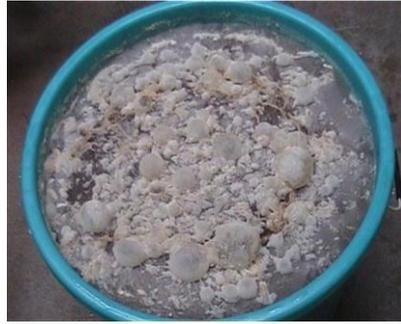
## **How to prepare activated EM solution (AEM) from EM stock solution (Maple EM.1)**

EM stock solution (Maple EM.1) is the dormant version of AEM. It has a shelf life of 24 months. EM stock solution needs to be “extended” or “activated” prior to use.

Activation requires the following materials and steps: 1 liter of Maple EM.1 and 1 kg or 1 liter of jaggery, preferably grown organically, are to be mixed with 20 liters of water.



**Dissolving jaggery in water**



**Activated EM solution ready for use**

The water must be clean and free from chlorine. The container should be of food-grade plastic. (Glass or metal containers are not appropriate as the development of gas may cause the container to break or explode.) It must be clean, free of contamination with toxic chemicals (pesticides etc.), and have an airtight lid. (As little air as possible should be left in the container, between the liquid and the lid.) As gas will develop during the fermentation, the lid will have to be opened every day to release the pressure.

For the period of activation, in tropical regions such as South India, the container has to be placed in shade at ambient temperatures (20-40 degrees Celsius) without exposure to strong temperature fluctuations. Depending on actual ambient temperatures, AEM will be ready after five to seven days. (This can be verified by measuring the pH which should be about 3.5, and by AEM's pleasant sweet-sour smell.)

From one liter of EM stock solution and one kg (or liter) of jaggery, you can produce 22 liters AEM ready for use. In hygiene, AEM is being used full strength or in dilution with water up to 1:100; in farming in dilutions ranging from 1:200 to 1:1,000; and in wastewater treatment diluted (with effluent or sewage) up to several thousand times. – Thus, with 1 liter of Maple EM.1, 2,200 liters (if AEM is diluted 1:100) or 22,000 liters (if AEM is diluted 1:1,000) of solution can be produced, and even bigger volumes of effluents can be treated.

As the ideal microbial composition of AEM will deteriorate over time, it should be used within one to two months. Users are advised to prepare only the volume of AEM which they can use within one month. EM stock solution should be extended only once.

EM stock solution can also be activated with the help of rice water and sugar (see below). For various preparations that can be made from Maple EM.1, please refer to our how-to-do infos.

You may also consult the following websites:

[www.emrojapan.com](http://www.emrojapan.com)

[www.agriton.nl/apnanman.html](http://www.agriton.nl/apnanman.html)

[www.emtech.org](http://www.emtech.org)

[www.apnan.org](http://www.apnan.org)

[www.lindros.co.za](http://www.lindros.co.za)

[www.embiotech.org](http://www.embiotech.org)

[www.emrousa.com](http://www.emrousa.com)

### **EM solution activated with rice water**

In kitchens and canteens where large amounts of rice are washed everyday, or in places where jaggery is not readily available, the water used for the washing of rice can be used for the activation of EM.1.

Collect the water of the first two or three washings of rice. Mix 3 volume parts of Maple EM.1 and 2 volume parts of sugar with 95 volume parts of the rice water.

Ratios:	EM.1	:	sugar	:	rice wash water
	3	:	2	:	95
	1	:	0.7	:	32

Store the mixture in an airtight plastic container and deal with it in the same fashion as explained for jaggery-based AEM.

Rice wash AEM is used in the same way as jaggery-based AEM. It has the advantage of being white in colour and hence is more readily accepted in the context of hygiene management.