

Lactic Acid Bacteria

This powerful bacteria can be used as a tonic for livestock to aid feed efficiencies and eliminate some toxins. It's very effective in 'cleansing' a wide range of foul (fowl) odours, anaerobic composts, septic tanks, blocked drains and cleaning troughs. Lactic bacteria produce a wide range of enzymes and antibiotics.

Recipe:

- 4 litres rice wash
- add 40 litres Milk
- After rice wash and milk remove curds – around 4 litres
- Left with 40 litres pure LAB (lactic acid bacteria)

To preserve at room temperature, add an equal part sugar/molasses to the serum. So, if you have 4 litres of serum, add 4 litres molasses.. Otherwise store in fridge to keep.

BEFORE USING, FIRST MIX 1:20 WITH WATER. 1 PART SERUM TO 20 PARTS UNCHOLORINATED WATER.

Method:

Take a sterilized container and fill it 25-50% with rice wash (that's the solution which comes off rice when you rinse it). It is important to have a good air space in the container. Put a fine mesh or muslin cloth tightly over the top of the lid (you want airflow, but not flies!). Put the container in a quiet area out of direct sun. At 70-80°F it takes the bacteria 5-7 days to grow. it is ready to extract when you see a light film on top (molds) and it smells a little sour and forms 3 layers. This is indicating the rice wash is infected with various microbes. This happens more quickly in warm temperatures because microbes are more active.

The layers are distinct:

Top layer: floating carbohydrates leftover from fermentation and possibly molds

Middle layer: Lactic Acid and other bacteria (cheese buffs will recognize this as a makeshift “rennet”). We will use this layer. Bottom layer: Starch, byproduct of fermentation

Extract the large middle layer using a siphon. This layer contains the highest concentration of lactic acid bacteria and lowest concentration of the unneeded by-products.

Put the liquid from the 2nd layer into another larger container and add ten parts milk. (discard the other layers into your compost) By saturating with milk (lactose), we dissuade other microbes from proliferating, leaving L. bacilli.

You want to keep this stage anaerobic as much as possible. You can use something like rice bran, barley bran, wheat bran, etc sprinkled on top of the milk. I use a sealed container with a one-way valve. **Note: Beware of bubbling during this phase. It can lead to overflows if you filled to near the top.**



After about 1 week (temp dependent), you'll see curds (made of carbohydrate, protein, and fat) on top of the milk. The water below will be yellow colored – this is whey, enriched with lactic acid bacteria from the fermentation of the milk.

The water below (whey+lacto) is the good stuff. You want to extract this. You can either skim the curds off the top, pour through a strainer, or whatever other methods to accomplish that.

NOTE: Remember the curds, or byproduct of milk fermentation by *L. bacilli*, are great food. They are full of beneficial microbes like *L. bacilli*. Feed the curds to the soil, compost pile, plants, animals, humans – whoever wants them! They are full of good nutrients/microbes. No waste in natural farming :-)

Using the LAB

Animals – Digestive/Growth Aid:

Mix 8 Tbsp to 4 litres water, then add that mixture to animal's water at 8 Tbsp/ 4 litres (so the animal's water contains little less than a tsp/ litre of lacto serum). But this is flexible.

- Aids digestion in animals. This is critical. You can raise animals on less food, and see the same and greater growth rates. The principal is that the microorganisms help digest the food coming in – better digestibility means better nutrient absorption. Save on feed with better feed to growth conversion ratio! Spray diluted onto hay/hardfeed.
- Humans: improves how you feel after meals, particularly meals rich in meats. It's awesome. After eating, mix 1-2tbsp lacto with a cup of water and drink that. Makes you feel so much better after! Lessens that afternoon lull, gives you more energy!

Animal Bedding:

Mix 8tbsp to 4 litres water. Mix with animal bedding to reduce smell and increase longevity. Spray until bedding is slightly damp but not wet. How much you spray really depends on your climate. If you are in a very dry climate you can spray a little more and mix in evenly. Wetter (more humid) climates use a bit less. Mix into the bedding evenly where necessary (in many cases, like with pigs and chickens, they'll mix it themselves). How much you use is all relative. These guidelines are for pigs and chickens. More extreme smells, just use more!

Odor Reducer:

Add mixture to animal's water at 8 Tbsp/ 4 litres. You can mix it more or less, there are no rules here, just how we typically do it.

Apply to places where there is odor buildup. The harmless bacteria “eat” the odor causing germs and the smell is gone!

- Indoors: reduces foul odors, including animals like cats, dogs, mice, other pets. Stinky shoes? Wet clothes from being outside? Gym clothes that haven't made it to the wash yet? Smoker in the house? Kill these nasty smells!
- Use to control odor in pens – pigs, cows, chickens. In barns, around the yard, etc