

## Lactic Acid Bacteria Serum

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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 (unprocessed if possible)
- 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.

**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 20-25°C (70-80°F) it takes the bacteria 5-7 days to grow. At lower temperatures two weeks is best.

it is ready to extract when you see a light film on top and it smells a little sour. This is indicating the rice wash is infected with various microbes. This happens more quickly in warm temperatures because microbes are more active.

If it grows black colonies on top, you've contaminated your brew- you'll need to start again 😞

Pour the liquid through a sieve into another larger container and add ten parts milk. 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. Ideally 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.

**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 regenerative farming :-)

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. Preserve the culture. Either place the culture in a refrigerator where it will keep for up to a year (if the mixture smells sour, the lactobacilli are no longer present) or stabilise the culture with 1:1 parts sugar or molasses.

## Using the LAB

Basic dilution is 1:1000

### Animals – Digestive/Growth Aid:

Mix 8 Tbsp to 4 litres water, or 1:1000 in trough or heading tanks.

- Aids digestion in animals. This is critical. Some anecdotal reports say that 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.

### 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!

The LAB has been found to control troublesome diseases like coccidiosis. If you're raising young animals in confinement, apply liberally- like sending in the army to overwhelm attackers with sheer numbers.

## 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.

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? Smelly fridge! 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
- Eat biofilms – anywhere biofilms build up to create slippery conditions- dairy sheds- apply liberally.
- Spray before cutting for silage, or to lift the brix of poor quality silage.

Enjoy!!