



Liquid Biological Amendment (LBA)

Instant Extract Recipe

1. Place the first two ingredients into the BioExtractor Bag™.
(Additional Extraction: Fill the tank by running the water through the bag.)
2. Once the tank is full, ensure that the bag hangs below the water surface and extract the microbes into the water by massaging/squeezing/manipulating the bag for 5-10 minutes.
3. Add all other necessary ingredients directly into the water, mix well, and **apply immediately**.

Application Rate: 1 Gallon of full strength extract per 5-10 square feet of soil surface area every 1 to 2 weeks. Dilute or water in as needed to ensure complete soil coverage.

<u>Measure By VOLUME</u>	ROOT DRENCH		
	5 Gallon	50 Gallon	250 Gallon
Biologic Systems™ Worm Castings	6 Ounces	1.5 Quarts	6 Quarts
Biologic Systems™ Humus	6 Ounces	1.5 Quarts	6 Quarts
Biologic Systems™ Kelp Extract	1 TBSP	4 Ounces	2 Cups
Biologic Systems™ Fish Hydrolysate	4 Ounces	1 Quart	4 Quarts
Biologic Systems™ Liquid Humic Acid	2 Ounces	2 Cups	2 Quarts
<i>Streptomyces lydicus</i> (Actinovate, Forge Actino Mate)	1 TBSP	2 Ounces	1 Cup
<i>Bacillus subtilis</i> (Armory, Bac Blend, Bacsilli, Companion, Serenade)	1 TSP	1 Ounce	4 Ounces
Endo Mycorrhizae*	1 Ounce	4 Ounces	2 Cups
<i>Azospirillum brasilense</i>** (Nitryx or Liquid Azos Blue)	1/2 TSP	1 Ounce	4 Ounces

NOTES: * Use Endo Mycorrhizae in vegetative growth and in the first 2 weeks of flowering growth only.

** Use Azospirillum during vegetative plant growth only.

Conversions: 2 TBSP = 30mL = 1 oz 8 oz = 1 Cup 4 Cups = 1 Qt 4 Qts = 1 Gallon



Instant LBA vs Brewed Compost Tea

What Are Liquid Biological Amendments?

At BioLogic Systems, we prefer to use the term “Liquid Biological Amendment” (LBA) rather than “compost tea.” We no longer recommend that it is necessary to aerate or brew an LBA for an extended period of time. When working with tested inoculum-grade inputs that contain proven beneficial biology, a very potent “Instant LBA” can be achieved by simply liquefying and applying the products to plants *immediately* without allowing for brewing time. After conducting numerous side-by-side trials comparing a brewed LBA versus an Instant LBA, we have concluded that the brewing process is not necessary and that the focus should be on using quality input materials. Instant LBA’s can be made for both root drench and foliar applications. Although some specific contexts still exist for aerobically brewing an LBA in large agricultural contexts, we feel the professional hobby gardener or small-scale farmer can achieve maximum results without this added process.

The Instant LBA approach may have many advantages over “brewed compost teas” including:

- Time Savings – Instant LBA’s can be made in a few minutes anytime on the fly.
- Eliminate the need for expensive air pumps, compost tea brewers, and tanks.
- Increase the odds of growing the “correct microorganisms” for your plant by allowing the reproduction of the organisms to occur in the soil and on plant surfaces rather than in a compost tea brewer. Extended brewing periods will select for organisms that can grow in water, which may or may not be the correct biology for your specific plant.
- The Instant LBA approach allows the grower to mix a highly concentrated LBA with no risk of it culturing anaerobic pathogenic organisms.
- Reduce anaerobic biofilm accumulation in tanks and hosing that is caused by exposure to highly active LBA’s.