



Liquid Biological Amendment (LBA)

Instant Extract Recipe

1. Extract the first four ingredients into the water using a BioExtractor Bag™.
2. The kelp may clump together. We recommend dissolving it in a separate container with at least a gallon of water by vigorously agitating and adding the kelp solution directly into the extract.
3. Add all other necessary ingredients directly into the water, mix well, and apply immediately.
4. 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>	<u>ROOT DRENCH</u>		
	5 Gallon	50 Gallon	250 Gallon
Worm Castings	1 Cup	2 Quarts	8 Quarts
California Humus™	4 Ounces	1 Quart	4 Quarts
Insect Frass™	2 Ounces	2 Cups	2 Quarts
Granular Humate	2 Ounces	2 Cups	2 Quarts
Fish Hydrolysate	4 Ounces	1 Quart	4 Quarts
Kelp Powder	1 TBSP	4 Ounces	2 Cups
Endo Mycorrhizae*	1 Ounce	4 Ounces	2 Cups
Actinovate AG™	1 TBSP	2 Ounces	1 Cup
Liquid Azospirillum**	1/2 TSP	1 Ounce	4 Ounces
Serenade Optimum™***	1 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.
 *** Serenade Max may be used in place of Serenade Optimum at twice the application rate.

Conversions: 2 TBSP Per Ounce 8 Ounces Per Cup 4 Cups Per Quart 4 Quarts Per 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.