

RECOMMENDED SURVEY RESPONSES

1. Answers to questions 1 through 4 are specific to your growing operations.
5. Describe how this substance is used in your operation and why is it necessary.
 - a. How it is used:
 - i. Pre-planting soil preparation
 - ii. Drip application at planting
 - iii. Side-dressing / knifing
 - iv. Foliar feeding
 - b. Why it is necessary?
 - i. Improved crop yield and crop quality.
 - ii. Efficiency of application (liquid vs. solid)
 1. liquids are absorbed into the soil and root systems faster than solid fertilizers.
 2. growers using liquid fish fertilizers have significant investment in equipment for liquid applications.
 - iii. Fish hydrolysates provide beneficial micro-nutrients, oils, enzymes, proteins, and amino acids, that energize soil biology to create absorbable plant nutrients and activates roots system absorption capacity.
 - iv. There are a limited number of organic liquid fertilizers available to growers; liquid fish fertilizers constitute a large portion of those available and are cost competitive.
 - v. Improved insect suppression.
 - vi. Improved disease suppression.
6. Describe the availability and efficacy of allowed alternatives for this substance.
 - a. There are few if any equivalent alternatives to liquid fish fertilizer. Where nutrient equivalents exist, they are not economically viable due to their high cost.
7. Describe the effects to your operation should you no longer be allowed to use this substance.
 - a. Agronomic effects (effects to health of crop)
 - i. Potential for:
 1. increase in disease incidence
 2. greater loss from insect damage
 3. increased environmental stress
 4. decreased yield
 - b. Environmental effects (effects to environment if the substance was no longer allowed AND effects to environment from potential alternatives)
 - i. Increased run-off and leaching
 - ii. Depletion of soil biologic activity
 - iii. Depletion of soil nutrients (micro and macro)
 - iv. Increased use of insecticides and fungicides due to plant stress and reduced suppression of insects and disease
 - v. Fish scrap used to make liquid fish fertilizer would not be consumed and will end up being dumped in landfills

- vi. Alternatives, like manure or compost, carry higher risk for pathogenic contamination
 - vii. Alternatives, like salt-based fertilizers, have a potential for contamination
 - c. Economic effects (effects to economic health of your operation)
 - i. Reduced crop yield
 - ii. Reduced crop quality (nutritional value)
 - iii. Increased cost of using alternatives
 - iv. Equipment for liquid applications could be rendered obsolete
- 8. Based on your answers to the four questions above, rate the necessity of this substance (i.e. how necessary is this substance to the continued success of your organic operation?) Rank 1-10 (critical)