

Fish Amino Acid

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SUMMARY

According to recent research, certain amino acids and their metabolites play a significant role in regulating important metabolic pathways that are required for a variety of fishes' maintenance, growth, feed intake, nutrient utilization, immunity, behavior, larval metamorphosis, reproduction, and resistance to pathogenic organisms and environmental stressors. Skin, head, viscera, trimmings, liver, bones, and roes make up almost 60% of the trash that is produced during the processing of fish. These goods are good sources of nutrients for the growth and development of plants. Every farmer can make fish amino acid on their own using this much less expensive method. Fish Amino Acid also improves the soil fertility and microbial activity in the soil. Fish Amino Acid also act as insect protection to plant.

INTRODUCTION

A liquid derived from fish is called Fish Amino Acid (FAA). Due to its abundance of minerals and different kinds of amino acids, FAA is very beneficial to the growth of both microbes and plants. For plants, it will serve as a source of nitrogen (N). Fish with blue backs will receive favorable FAA. It increases the activity of microorganisms and is directly absorbed by the crops. When used with a pinch of urea, the effects of FAA are more noticeable. Fish are considered a protein source with high nutritional value, rich in essential amino acids, unsaturated fatty acids, which makes it essential for consumption. In 2016, 47% of the fish farming increase in specific for mostly FAA producing fishes. Example for salmon fishes, worldwide 27 fish species more suitable for fish amino acid production in industrial purpose.

More Suitable Fish Species

The small native fishes, *Catla catla*, *Labeo rohita*, and *Cirrhinus mrigala*, as well as the *catfishes*, *Sperata seenghala*, *Heteropneustes fossilis*, and *Clarias batrachus* *Amblypharyngodon mola*, *Anabas testudineus*, and *Puntius sophore* are all freshwater fish and *Tenuulosa ilisha* (anadromous), the cold water fishes *Oncorhynchus mykiss*, *Tor putitora*, *Schizothorax richardsonii*, *Neolissochilus hexagonolepis* and *Cyprinus carpio*; the marine fishes *Thunnus albacares*, *Stolephorus waitei*, *Stolephorus commersonii*, *Rastrelliger kanagurta*, *Nemipterus japonicas*, *Sardinella longiceps*, *Katsuwonus pelamis*, *Epinephelus spp.*, *Leiognathus splendens*, and *Trichiurus lepturus*, and the shellfishes *Crassostrea madrasensis*, *Perna viridis*.

Uses of Fish Amino Acid

- FAA has a lot of nitrogen. When combined with other natural farming materials, it improves crop growth during the vegetative growth period, making it an excellent fertilizer to apply to both soil and foliage. FAA can be used consistently to boost yield and enhance flavor and smell in green vegetables. Apply the FAA after diluting it with water in a 1:1000 ratio when creating IMO or mixed compost. The microbes will then be activated with assistance from the FAA.
- The green house whitefly (*Trialeurodes vaporariorum*) and mites can be effectively eradicated with Mackerel FAA. Spray FAA on the leaf's two sides after diluting it with water.
- Increase the soil fertility and microbes population in soil.
- Increase the crop yield and effective plant growth.
- FAA provide necessary nutrient for plant and increase the immunity system

NOTE ; It is not recommendable to use FAA during the period of reproductive growth, because it may induce over growth.

Benefits Of Fish Amino Acid

- Comparatively in low cost in artificial herbicides, pesticides.

- FAA act as a multi role in plant development.
- Its most in ECO friendly and not cause any harmful effect in environment.
- FAA contain high amino acids , proteins, micro nutrient, macro nutrient, nitrogen,,etc.

Procedure For Fish Amino Acid

- Take clay pot or plastic jar.
- Collect fish waste (Blue black coloured fish are contain high amounts of amino acid.
- Gather 10 kg of rural jaggery from a nearby location.
- 10 kg of well repined papaya.
- Place the one layer of fish waste on the bottom of the container and one layer of powdered country jaggery and papaya (1:1 weight ratio).
- Fill the jar up to 2/3 of its volume.
- Mix it well, minimum 5 to 6 layers make in the container.
- Cover the container with a lid and stored in black room.
- Well-ventilated location secured from animals.
- The procedure takes two to six months to finish and results in a mature, usable FAA.
- FAA, will have a sweet, slightly fishy odour.

Materials Required

- Plastic or glass container
- Fish waste
- Jiggery
- Well matured papaya

NOTE; FAA apply for plant in both foliar and soil application



Plastic container



Fish waste



Jaggery



well matured papaya



Fish amino acid

Fish Amino Acid chemical characteristics

- **Nitrogen** - 6.5%
- **Phosphorus** - 1%
- **Potassium** - 1.5%
- **Zinc** - 5ppm
- **Copper** - 15ppm
- **Boron** - 7ppm
- **Molybdenum** - 15ppm
- **Calcium** - 15ppm
- **Sodium** - 1%
- **Ferrous** - 5ppm

Fish Amino Acid Physical Characteristic

- **Black colour**
- **Fish odour**
- **Liquid form**
- **100 % water soluble**
- **Storage in ambient bottle**

CONCLUSION

Fish amino acid is commercially used for many farmer in our improved soil fertility ,microbe population ,easy to produce and low cost of production , FAA one of the chief and best fertilizer in compare to others. Most of government organization like kvks, research station, extension officers etc. and non government organization are create the awareness in FAA benefits ,uses and how to produce FAA. Recently most of the organic and non organic for change in artificial fertilizer to FAA, most of the farmer produce FAA and sale for other farmers. FAA is impact create 2018- 2023 reduce 0.001 % artificial fertilizer ,herbicide and pesticide consumption for farmer in world wide .

REFERENCES

- Li, Peng, et al. "New developments in fish amino acid nutrition: towards functional and environmentally oriented aquafeeds." *Amino acids* 37 (2009): 43-53.
- Wilson, Robert P. "Amino acids and proteins." *Fish nutrition*. Academic press, 2003. 143-179.