



PESCADERO GOLD FOR CANNABIS & HEMP

Mustard Seed Meal Soil Amendment & Fertilizer · Living Soil, Beds & Field

Guaranteed Analysis 4.5-1.5-1.0 | ~1.09% Sulfur | CDFA-Registered | OMRI Listed | 100% Plant-Derived

Feed the soil. Grow the plant. One clean, plant-derived input. Pescadero Gold is a 100% plant-derived mustard seed meal: a CDFA-registered soil amendment and organic fertilizer built for living-soil growing. It is food for your soil food web. As the biology breaks it down it releases organic, ammonium-form nitrogen and feeds the bacteria and fungi that cycle nutrients at the root, so your plants get a steady, natural feed instead of a synthetic-salt spike. Made from a proprietary blend of mustard and nothing else, it is OMRI Listed, No-GMO and entirely plant-derived, a clean input for a crop that gets tested. It fits organic, no-till, KNF and JADAM living-soil programs as easily as it fits the open field.

WHY IT WORKS: BIORENOVATION

- **Clean, plant-derived organic nitrogen.** Mustard seed meal mineralizes to ammonium first and releases it gradually as soil microbes break it down, an early ammonium feed that converts toward nitrate over the following weeks. Roughly 4.5% N, plus phosphorus, potassium and sulfur, with no synthetic salts and no animal byproducts.
- **Feeds the soil food web.** This is a biology-first input: it feeds the bacteria and fungi that hold and cycle nutrients, and the protozoa and beneficial nematodes that graze them release plant-available nitrogen right in the root zone. You feed the soil, and the soil feeds the plant on its own schedule.
- **Builds living, structured soil.** Plant-derived organic matter feeds soil structure and tilth, not just the N-P-K line, giving roots a mellow, biologically active root zone and improving the medium cycle after cycle.
- **A clean input for a tested crop.** OMRI Listed, CDFA-registered, No-GMO and single-source plant-derived. In a crop where flower and concentrate get lab-tested for residues and heavy metals, a clean, traceable input you can build a program around matters.



Field-grown cannabis on a Farm Fuel mustard seed meal program.

THE SOIL BIOLOGY IT BUILDS

Living-soil growers feed the soil, not the plant, and Pescadero Gold is made for that philosophy. Bacteria and fungi break the meal down and hold its nutrients in their bodies; protozoa and beneficial nematodes graze them

and release plant-available nitrogen at the root; decomposer actinomycetes turn over organic matter and keep the cycle running. Field research on mustard seed meal shows it is rapidly metabolized by the soil community and shifts it toward these beneficial, nutrient-cycling groups. It is the makeup and activity of that community, not just the count, that keeps a bed productive season after season.

BENEFICIAL BACTERIA ENHANCED	BENEFICIAL FUNGI ENHANCED
Bacillus spp.: nutrient solubilization, root-zone vigor	Trichoderma: root health, organic-matter breakdown
Pseudomonas fluorescens group: active rhizosphere colonizers	Mortierella: plant-growth promotion, phosphorus mobilization
Streptomyces (actinomycetes): nutrient cycling, organic-matter turnover, the earthy smell of healthy soil	Clonostachys: soil food-web support
Burkholderia: root-zone health, nitrogen cycling	Talaromyces: nutrient solubilization
Lysobacter: organic-matter breakdown	Saprophytic decomposer fungi: build the fungal side of a no-till soil
Sphingomonas: degradation of organic compounds	

Built for the recharge. These shifts in the soil community persist across cycles. In a reusable, no-till living-soil bed, a between-cycle application recharges the biology and replaces the organic nitrogen your last crop pulled out, so the benefit compounds over successive runs instead of resetting each time.

Which specific taxa rise is context-dependent; the consistent, documented effect is that mustard seed meal enhances the soil's bacterial and fungal communities and nutrient cycling, reliably enriching decomposer actinomycetes such as Streptomyces. Add your mycorrhizal inoculant at transplant (see application), after the rest period.

NUTRIENTS: MORE THAN N-P-K

NUTRIENT	GUARANTEE D	PER TON	VALUE IN CANNABIS & HEMP
Nitrogen (N)	4.5% min.	~90 lbs	Ammonium-form organic nitrogen released gradually as the biology works, feeding vegetative growth without a synthetic-salt spike. Lots often exceed label. Build it into the soil and let the biology meter it out.
P ₂ O ₅ / K ₂ O	1.5% / 1.0%	~30 / ~20 lbs	Supports root development and early growth, with a modest potassium contribution. Does not replace a full bloom or potassium program.
Sulfur (S)	1.09%*	~31 lbs	Built-in sulfur, supporting plant metabolism and soil microbial activity, a nutrient many organic programs under-supply.

* 1.54% S confirmed in lot analysis (A&L Western). The low C:N (~9:1) drives efficient, predictable nitrogen release. Does not replace a full potassium, bloom or micronutrient program. Confirm rates against your own soil or media test and feeding plan.

APPLICATION AT A GLANCE

SETTING	RATE	HOW	WAIT
Outdoor / field hemp	1 to 2 tons/acre broadcast (milled)	Incorporate 15-30 cm; water in	~3 weeks before planting
Living-soil beds & containers	~5 lb / 100 sq ft, or ~½ lb per 1.5 cu ft of mix (a bag of soil)	Blend evenly through the root zone; do not band on roots	3+ weeks before transplant
Between cycles (recharge)	Lighter maintenance rate; pelleted for clean top-dress	Top-dress and water in; keep the bed alive	Rest before replanting

Let it mellow. Fresh mustard seed meal is biologically hot: incorporate it, water to working moisture, and give it about three weeks so the biology settles and the nitrogen converts to a plant-friendly form before transplant. Blend thoroughly in containers and never band it on live roots. Milled product mixes into beds and media; pellets give a slower feed for clean top-dressing (keep top-dress rates modest). Add your mycorrhizal inoculant at transplant, into the hole or container, once the rest period is done. Many Farm Fuel cannabis growers pair Pescadero Gold with Pajaro Valley Gold rice bran as a complete organic-carbon-plus-nitrogen program. Work with a Farm Fuel consultant to dial in rates for your soil, media and cycle.



Greenhouse cannabis grown on a Farm Fuel mustard seed meal program.

BUILT FOR LIVING-SOIL & NO-TILL PROGRAMS

Recharge the bed, reuse the medium. Living-soil and no-till growers depend on a biologically active, self-sustaining medium and want to reuse it rather than replace it. Pescadero Gold is a clean way to keep that system running: worked into a bed or blended into a mix, it rebuilds the microbial community and restores organic nitrogen for the next crop, so a well-kept living soil gets better with age. Reusing and regenerating your growing medium cycle over cycle also cuts input and disposal cost, a long-term goal Farm Fuel has pursued directly in cannabis systems.



Pescadero Gold mustard seed meal evaluated in a Farm Fuel soilless-media cannabis trial.

THE VALUE

- **Clean organic N, built in.** At field rates Pescadero Gold can stand in for a separate pre-plant nitrogen application, a documented saving of roughly \$400/acre in field systems, while feeding the biology at the same time.
- **Value that compounds in living soil.** Because the soil-biology and organic-matter benefit builds cycle over cycle and supports reusing your medium, the return grows over the life of a living-soil program rather than resetting each run.

THE SCIENCE BEHIND IT

Pescadero Gold's soil-biology and fertility benefits are grounded in independent university and USDA research on mustard seed meal, and in Farm Fuel's own evaluations in cannabis and hemp. Farm Fuel has run Pescadero Gold in cannabis and hemp in both field soil and soilless media, seeing strong, safe vegetative response; in a Farm Fuel soilless-media trial the meal fed cannabis across a range of rates and proved safe even at high rates when given adequate plant-back time.

- **Mazzola, Hewavitharana & Strauss (2015)**. Phytopathology 105:460–469. Mustard seed meal durably transforms the rhizosphere microbiome toward a distinct, beneficial community that persists across seasons. <https://apsjournals.apsnet.org/doi/pdf/10.1094/PHYTO-09-14-0247-R>
- **Ren et al. (2018)**. Frontiers in Microbiology 9:185. Brassica seed meal significantly enriched beneficial decomposer actinomycetes, with Streptomyces rising several-fold in relative abundance. <https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2018.00185/full>
- **Cohen, Yamasaki & Mazzola (2005)**. Soil Biology & Biochemistry 37:1215–1227. Brassica seed meal modified soil microbial community structure and increased Streptomyces populations. <https://www.sciencedirect.com/science/article/abs/pii/S003807170400447X>
- **Snyder, Johnson-Maynard & Morra (2010)**. Applied Soil Ecology 46:73–80. Brassicaceae seed meals are actively metabolized by the soil community and release nitrogen ammonium-first and gradually (about 34–49% mineralized in ~45 days). <https://www.sciencedirect.com/science/article/abs/pii/S0929139310001137>

TALK TO US ABOUT YOUR LIVING-SOIL PROGRAM

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Pescadero Gold is sold as a fertilizer and soil amendment. CDFA-registered, OMRI Listed, No-GMO and 100% plant-derived. Approved for certified organic and conventional production.