



PERRY AGRICULTURAL LABORATORY, INC.

P.O. BOX 418, HIGHWAY 54 EAST
BOWLING GREEN, MO 63334
573/324-2931

| | | | |
|---------------|-------|------|-----------|
| REPORT NUMBER | C0099 | DATE | 2/23/2010 |
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SUBMITTED FOR:
SAMPLE REPORT

SEND TO:
P.A.L., Inc.
P.O. BOX 418

BOWLING GREEN, Missouri 63334

SOIL REPORT

RATING

| | | | | | |
|----------|-----|----------|---------|-----------|--------|
| VERY LOW | LOW | MODERATE | DESIRED | VERY HIGH | EXCESS |
|----------|-----|----------|---------|-----------|--------|

| | | | |
|-----------------|------------|----------------|------------|
| Sample: | JUNK MAKAI | pH | 5.30 |
| ACRES: | | PHOSPHORUS (P) | 178 lbs/a |
| CEC: | 31.62 me | SULFUR (SO4-S) | 198 lbs/a |
| SOIL TEXTURE: | Clay | CALCIUM (Ca) | 5651 lbs/a |
| ORGANIC MATTER: | 7.10 % | MAGNESIUM (Mg) | 1340 lbs/a |
| | | POTASSIUM (K) | 1490 lbs/a |
| Neut. A: | 10.00 | SODIUM (Na) | lbs/a |
| | | | |
| | | BORON (B) | 2.02 ppm |
| | | IRON (Fe) | 18.00 ppm |
| | | MANGANESE (Mn) | 70.00 ppm |
| | | COPPER (Cu) | 0.10 ppm |
| | | ZINC (Zn) | 17.50 ppm |
| | | | ppm |

BASE SATURATION PERCENT

| | |
|------------|-------|
| CALCIUM: | 44.68 |
| MAGNESIUM: | 17.66 |
| POTASSIUM: | 6.04 |

SOIL FERTILITY RECOMMENDATIONS

| CROPPING OPTIONS | YIELD GOAL | SUGGESTED TREATMENT POUNDS / ACRE | | | | | | | | | |
|---------------------|------------|-----------------------------------|----------------|------------|----------|---------|---------|--------------|-----------|---------|--|
| | | NITROGEN N | PHOSPHATE P2O5 | POTASH K2O | SULFUR S | BORON B | IRON Fe | MANGANESE Mn | COPPER Cu | ZINC Zn | |
| COFFEE ESTAB | 1 | 95 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| DATE/AMOUNT APPLIED | | | | | | | | | | | |

LIME RECOMMENDATIONS:

| | |
|------------|------|
| lbs ENM/A: | 3104 |
| APPLIED: | |

COMMENTS:

Conventional Fertilizer per tree over area defined by a 6 foot diameter: February apply 1/2 cup of lime, 1/2 cup of ammonium sulfate, 1 tablespoon of copper sulfate, For April and June apply 1/2 cup of lime and 1/2 cup ammonium sulfate, For August apply apply 1/2 cup of lime and 1/2 cup of ammonium sulfate.

I am concerned about the low calcium, low pH and low iron. It is difficult because we need the lime, but it may aggravate the iron shortage. So we need to go slow and keep an eye on things. Foliar is the best way to help the iron.

Take tissue test in May or June to evaluate your leaf nutrient status, include a soil test to check soil N level.

Organic Recommendations also available



Perry Agricultural Laboratory, Inc.
15241 Pike 138
PO Box 418
Bowling Green MO 63334

Email: palinc@hughes.net

Cell 573 253 3376
Phone 573 324 2931

We recommend a yearly soil test taken December through February. A tissue test taken in May or June along with a soil test for available N.

Complete Soil test including Micronutrient. \$18.90

Available N Test \$6.10

Basic Tissue analysis including N, P, K, Ca, Mg, and S \$21.50

Tissue Analysis, the above with B, Fe, Mn, Cu, and Zn. \$33.00

Instructions for Taking and Sending a Soil Sample

In a coffee orchard pick 3 to 4 trees that will be your sampling sites representing the area of interest. Very good or very poor areas should be sampled separately. The flats, if they exist, should be sampled separately from the sloping area.

The trees should be marked so that you can sample the same trees another year for comparison. At each tree collect soil from the surface down to 5 inches at four locations around the tree. These locations should be at the edge of the tree's expanse at the 10 o'clock position, half way in approaching the trunk; and again at the 2 o'clock position, and half way in.

Often stones must be moved and the mixture of peat and small rock is collected as the sample. Many coffee growers say they don't have any soil, not really true. The soil from all four trees can be mixed together. Then lay the soil out on newspaper to dry. The sample can then be mixed and sieved through a child's plastic beach toy sieve. This removes the pebbles and material insignificant to the analysis. We only need one cup of soil for the analysis.

The sample can be placed in a strong zip lock baggie and the baggie labeled with a permanent marker. Place a paper with the name and address of the farm, email address, sample name, crop (coffee, macadamia etc) and if the growing practice is organic or conventional. The card board flat rate envelopes at the post office are a very good way to send several samples. If you have several samples, place the group in baggies in a gallon size bag and seal.

Place the soil import label (attached) on the outside of the envelope, and the 6 page permit inside the package; and mail to Perry Agricultural Laboratory, Inc., P.O. Box 418, Bowling Green MO 63334 Our physical address is 15241 Pike 138.

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| U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE PLANT PROTECTION AND QUARANTINE HYATTSVILLE, MARYLAND 20782 |
| SOIL SAMPLES RESTRICTED ENTRY |
| The material contained in this package is imported under authority of the Federal Plant Pest Act of May 23, 1957. |
| For release without treatment if addressee is currently listed as approved by Plant Protection and Quarantine. |
| PPQ FORM 550 (JAN 83) EDITION OF 1277 MAY BE USED *U.S.G.P.O.:1990-(719-601) |

Leaf samples should be taken from the youngest mature leaf which is usually about the 3rd or 4th leaf back from the tip of a branch. Take the leaf sample from the trees that were used for the soil samples or near-by trees.

A permit is not needed to send leaf samples.

**Perry Agricultural Laboratory, Inc.
15241 Pike 138
P.O. Box 418
Bowling Green MO 63334**

Perry Agricultural Laboratory, Inc has been performing soil test for growers in Hawaii since 1987. They make every effort to have the results of their test understood by their clients and a clear recommendation made to improve the soil balance and health. They work with conventional and organic growers. The charge for their complete test is \$25.

Attached is a sample report

United States Department of Agriculture
Animal and Plant Health Inspection Service
4700 River Road
Riverdale, MD 20737

Permit to Move Live Plant Pests, Noxious Weeds, and Soil
Interstate Movement
Regulated by 7 CFR 330

This permit was generated electronically via the ePermits system

| | | | |
|-------------------------|---|----------------------------|-------------------|
| PERMITTEE NAME: | Robert Perry | PERMIT NUMBER: | P526P-09-02388 |
| ORGANIZATION: | Perry Agricultural Laboratory, Inc. | APPLICATION NUMBER: | P526-090129-007 |
| ADDRESS: | 15241 Pike 138 PO Box 418 Bowling Green, MO 63334 | FACILITY NUMBER: | 1663 |
| MAILING ADDRESS: | 15241 Pike 138 PO Box 418 Bowling Green, MO 63334 | HAND CARRY: | No |
| PHONE: | (573) 324-2931 | DATE ISSUED: | 07/23/2009 |
| FAX: | | EXPIRES: | 07/23/2012 |
| DESTINATION: | 15241 Pike 138, PO Box 418, Bowling Green, MO 63334 | | |
| RELEASE: | No | | |

Under the conditions specified, this permit authorizes the following:

Article Category: Soil for Nonbiological uses

| <u>Regulated Article</u> | <u>Life Stage(s)</u> | <u>Intended Use</u> | <u>Shipment Origins</u> | <u>Originally Collected</u> | <u>Culture Designation</u> |
|---|----------------------|---------------------------|-------------------------|--|----------------------------|
| Soil samples over 3 lbs to Inspected Facility | | Chemical analysis of soil | HI, PR | Originally Collected from HI or U.S. Pacific Territory | Chemical Analysis |

SPECIAL INSTRUCTIONS TO INSPECTORS

Permit Number P526P-09-02388

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| THIS PERMIT HAS BEEN APPROVED ELECTRONICALLY BY THE FOLLOWING PPQ HEADQUARTER OFFICIAL VIA EPERMITTS. | DATE |
| Osmond Baron | 07/23/2009 |

Instructions to PPQ Inspectors:

1. This facility may be inspected with or without prior notice at any time during regular business hours and must be in compliance with all authorizations and conditions specified in this permit during such inspections. PPQ Permit unit in Riverdale, MD, may also contact you to schedule formal inspections of this facility as part of continuing permit compliance monitoring.
2. Prior to inspections, contact PPQ Permit unit in Riverdale, MD, at 301 734-0654 for current information or documentation on the facility.
3. Any inspections or visits must be documented in the files located in the PPQ Permit unit in Riverdale, MD. You may fax reports to 301-734-5392 or email them to Pest.Permits@aphis.usda.gov.
4. Report all concerns about or violations of this permit to the PPQ permit unit in Riverdale, MD, at 301 734-6343/4404.

Permit Number P526P-09-02388

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WARNING: Any alteration, forgery or unauthorized use of this Federal Form is subject to civil penalties of up to \$250,000 (7 U.S.C.s 7734(b)) or punishable by a fine of not more than \$10,000, or imprisonment of not more than 5 years, or both (18 U.S.C.s 1001)

PERMIT CONDITIONS

This permit authorizes the interstate movement of soil from Hawaii (HI) and Puerto Rico (PR) to Missouri (MO) only for chemical analysis in a controlled laboratory environment at the named facility on the permit (Facility #1663). It is not authorized to be used in field research or release into the environment.

1. This permit is issued only for the named permit holder at the address(s) identified on this permit. This permit cannot be transferred or assigned nor does it fulfill or modify the requirements of any other federal or state regulatory authority (such as the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the U.S. Food and Drug Administration, the Centers for Disease Control and Prevention, or the Animal Health Protection Act- 7U.S.C. 8301, or your State's Department of Agriculture).
2. The permit holder verifies United States residency by initialing and accepting these permit conditions. If you are not a United States resident, it is unlawful for you to initial or accept these permit conditions because a USDA 526 Plant Pest Permit can only be issued to United States residents.
3. The permit holder is solely responsible for ensuring compliance with all statutory requirements and specifically listed permit conditions. Failure to comply with the terms and conditions of this permit is cause for the following: (a) cancellation of this permit, (b) cancellation of other permits issued to the permit holder, (c) seizure and/or destruction of regulated organisms, (d) denial of future permit applications by this permit holder, (e) liability for civil penalties, and (f) criminal prosecution under provisions in the Plant Protection Act.
4. Any alteration, forgery, unauthorized use of this permit and/or associated Federal Forms are subject to civil and criminal penalties including fines and imprisonment.
5. Importation, interstate movement, possession, and use of strains of genetically engineered regulated organisms (created by use of recombinant DNA technology) are not authorized under this permit.
6. This permit does not authorize movement or use of plant pathogens listed in the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. If any organism listed as a Select Agent is identified from materials associated with this research, the permit holder is required to notify APHIS, Agricultural Select Agent Program (ASAP) immediately by phone at 301-734-5960, and within seven (7) days submit APHIS/CDC Form 4 (Report of Identification of a Select Agent or Toxin in a Clinical or Diagnostic Laboratory) to APHIS, ASAP; 4700 River Rd, Unit 2, Riverdale, MD 20737 (see instructions at: http://www.aphis.usda.gov/programs/ag_selectagent/index.shtml). Failure to comply with this requirement is a violation of the Agricultural Bioterrorism Protection Act of 2002.
7. If organisms that are not authorized in this permit are received, the permit holder must take all prudent measures to contain the organism(s) and notify the PPQ permit unit by contacting a compliance officer immediately (that is, within one business day) by calling 866-524-5421 or by e-mail to pest.permit@aphis.usda.gov. The permit holder must immediately notify the permit unit of the destruction of regulated organisms received under this permit, as above. Similarly, the permit holder must immediately notify the permit unit if facilities are destroyed or decommissioned for any reason.
8. You as the permit holder are responsible for maintaining a valid permit for as long as the soil is in your possession. APHIS does not issue extensions or renewals of existing permits; the permit holder must submit a new permit application at least three months prior to the expiration of this permit, and obtain a new permit to continue uninterrupted authorization for the soil approved under this permit.

Permit Number P526P-09-02388

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9. If an accidental release into the environment occurs, immediate notification must be made to APHIS, PPQ, 4700 River Rd., unit 133; Riverdale, MD 20737; 301-734-6343. A written report of the incident must be submitted identifying: (a) the name of the permit holder (responsible person), (b) the permit number, (c) the country or State of origin of the soil, (d) the nature of the release, and (e) measures already taken to contain, reduce or limit the effects of the accidentally released soil. Any plans prepared to contain, reduce or limit the effects of the accidentally released soil may be submitted as developed.
10. Without prior notice and during reasonable hours, authorized PPQ and/or State regulatory officials shall be allowed to inspect the conditions associated with the regulated soil authorized under this permit.
11. The permit holder must maintain an official permanent work assignment at the address identified on this permit. If the permit holder ceases assignment/affiliation at the address identified on this permit, or personnel circumstances change in any way, then a compliance officer must be notified at the PPQ permit unit immediately (that is, within one business day) by either (a) email to pest.permits@aphis.usda.gov, (b) fax to 301-734-4300 or 8700, or (c) conventional mail to USDA PPQ Permit Unit, 4700 River Road, Riverdale, MD 20737. Should the permit holder depart from the organization/facility, the permit holder will either (a) request cancellation of this permit and comply with all permit-specific termination conditions, (b) apply for and receive a permit to move the soil to a new facility, or (c) relinquish control of the regulated soil to a qualified individual who obtained a permit for the continued use of this regulated soil prior to this permit holder's departure.
12. A copy of this permit must accompany all shipments authorized under this permit.
13. All costs and arrangements for safeguarding and transportation of the cargo are the responsibility of the importer, broker or other parties associated with the shipment.
14. All operations must be consistent with information submitted in association with above listed APHIS facility inspection number (#1663) and subject to the conditions below.
15. Soil shall be shipped in a securely closed, watertight container (primary container, test tube, vial, etc.) which shall be enclosed in a second, durable watertight container (secondary container).
16. The shipment must be free from debris, plants, noxious weed seeds and living organisms such as parasitic plants, pathogens, insects, Cyst or other nematodes, mollusks and acari.

If pests are found, immediate notification must be made to APHIS, PPQ, 4700 River Rd., Unit 133; Riverdale, MD 20737; 301-734-6343.

17. This permit does not authorize the use of soil for growing purposes, for isolation or culture of organisms, or for extracting and concentrating organisms from the soil.
18. Further distribution of soil is not allowed without prior approval from the Pest Permitting Branch- PPQ.
19. While in storage, all soil will be kept locked (e.g. in freezer, cabinet) in the approved lab with access limited to authorized personnel or they will be in a restricted access building that requires a key card entry and access is restricted to authorized personnel only; or it will be in locked room restricted to authorized personnel only.
20. The soil will be handled as quarantined material until sterilized. This will include keeping the soil enclosed in containers when not in use and labeling all containers and/or storage areas: "Quarantine Soil- Sterilize Before Disposal"

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21. All packing material, media, substrate, and shipping containers shall be sterilized or destroyed as approved and prescribed by the permit conditions after removing the soil.
22. All unconsumed soil, containers and effluent are to be autoclaved, incinerated or properly sterilized by the permittee at the conclusion of the project as approved and prescribed by the permit conditions.
23. Any water residues (effluent) from the processing of soil samples must be treated by an approved sterilization procedure. These are incineration or autoclave.
24. All soil residues must be dry-heated, incinerated, or autoclaved.

Dry Heat Treatment: use one of the following schedules:

- 110- 120.5 degrees C (230-249 F) for 16 hours
- 121-154 degrees C (250-309 F) for 2 hours
- 154.4 - 192.5 degrees C (310-379 F) for 30 minutes
- 193-220 degrees C (380-429 F) for 4 minutes
- 221-232 degrees C (430-450) for 2 minutes.

Time starts when the entire sample reaches the required temperature.

25. Autoclaving Soil and other material per the following conditions.
 - a. Soil must be autoclaved at 121 degrees Centigrade (250 degrees Fahrenheit) for a minimum of 30 minutes.
 - b. Autoclave tape or other indicators must be placed on each bag or sharps container prior to treatment. The autoclave tape or other indicator on each container must be checked to verify color change before disposal.
 - c. The autoclave log must be completed by each user for each autoclave cycle. All parameters must be noted as listed on the log for each autoclave load.
 - d. If the autoclave does not attain the minimum time and/or temperature or the autoclave tape does not change color, a notation must be made in the comment section of the autoclave log. The load must then be re-autoclaved after placing new tape on the material. If minimum time and temperature is not attained on the second cycle, users must contact the person responsible for maintaining the unit to initiate repairs. Waste should then be treated at the alternate autoclave facility.
 - e. Thermometers on the autoclave must be calibrated annually, and a written record must be maintained. This should be done by an authorized autoclave service company during routine servicing.
 - f. Every 6 months, you should use a commercially available test indicator kit that uses bacterial spores *Bacillus stearothermophilus* that are rendered unviable at 250 degrees F or 121 degrees C. For the test, ampoules of *B. stearothermophilus* are autoclaved along with a load of waste. Upon completion of the cycle, the ampoules are incubated for 48 hours and then observed for any sign of growth, which would indicate that the autoclave is not sterilizing properly. If any growth is observed, have autoclaved serviced and retest.

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26. Equipment and supplies used to conduct operations or that have contacted the soil must be decontaminated using one of the following methods:
- (a) Material can be soaked in a fresh bleach solution of 10 percent (1:10) for at least 30 minutes
 - (b) Material can be soaked in 70 percent ethanol
 - (c) Flamed with ethanol
 - (d) Treated with quaternary ammonium compounds.
- Note also that autoclaving, incineration, and dry heat sterilization are also acceptable sterilization/decontamination methods.
27. You must attach a PPQ Form 550 Black/White label to the exterior of each shipment being imported under this permit. We will send you the PPQ Form 550 Black/White labels upon issuance of this permit (i.e., a signed PPQ permit) by bonded courier. You may request additional labels by email at: Redandwhitelabelrequest@aphis.usda.gov. You must specify the type of label you are requesting, PPQ Form 550 Black/White labels, and the number of labels needed.
- You must enclose the following supplemental information with each shipment:
- Permittee Name
 - Permit number
28. Underlying packaging/wrapping must carry the address, billing, and any other information required to direct the shipment to its final destination (i.e., the permit holder's address; Please note: USDA APHIS does not defray any additional shipping costs incurred for transiting the shipment through an inspection station as the initial US destination).

END OF PERMIT CONDITIONS

Permit Number P526P-09-02388

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