Certified Organic Agriculture

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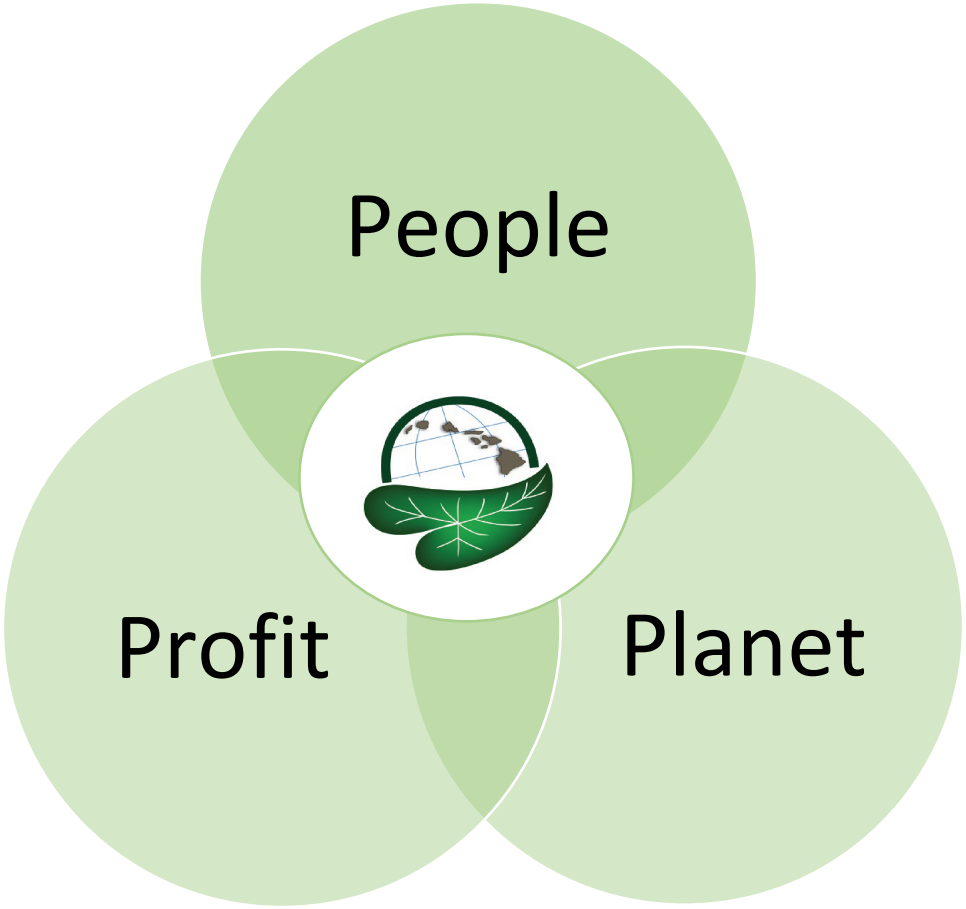
Sustainable and Organic Agriculture Program

College of Tropical Agriculture and Human Resources
University of Hawai'i at Mānoa

Sustainable and Organic Agriculture Program (SOAP)

- Established in 2009
- Certified organic research plots starting in 2009
- Statewide program focuses on:
  - Increasing farm income
  - Promoting environmental stewardship
  - Supporting prosperous farm families and communities



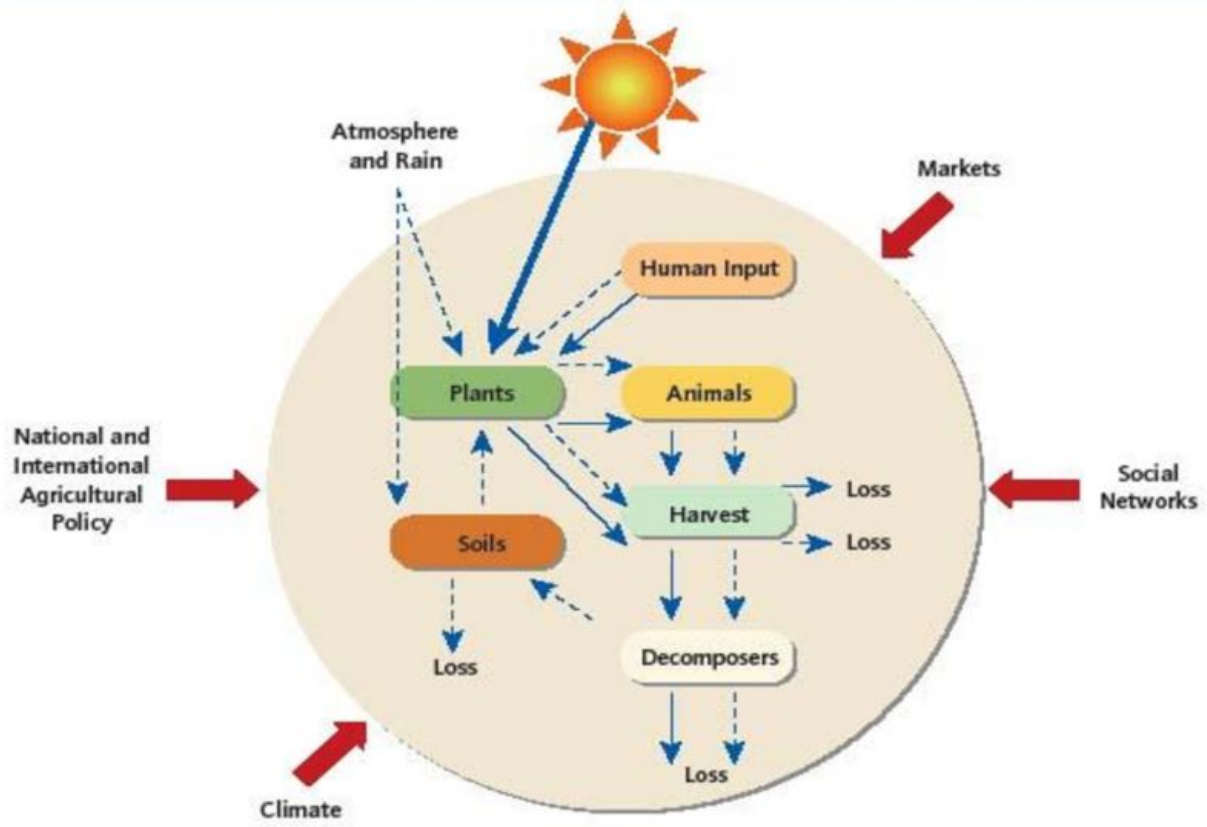
Extension

Research

Teaching

System

Boundries/Energy Flow



Synergy

1

1

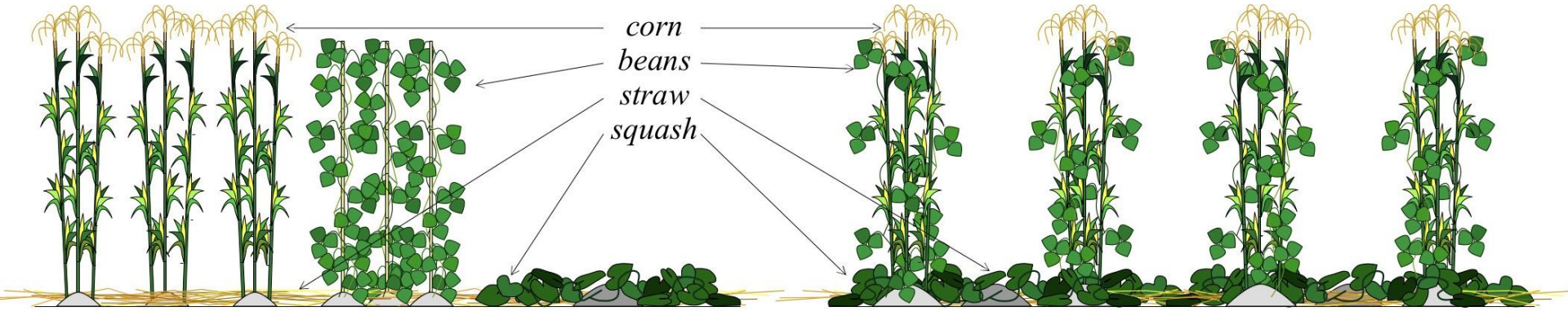
+1

>3

Méndez, V.E. (2010) Agroecology. pp. 55-59 In B. Warf (Ed.) Encyclopedia of Geography. Sage Publications: Thousand Oaks, CA.

Three Sister Test

Schematic of Concept



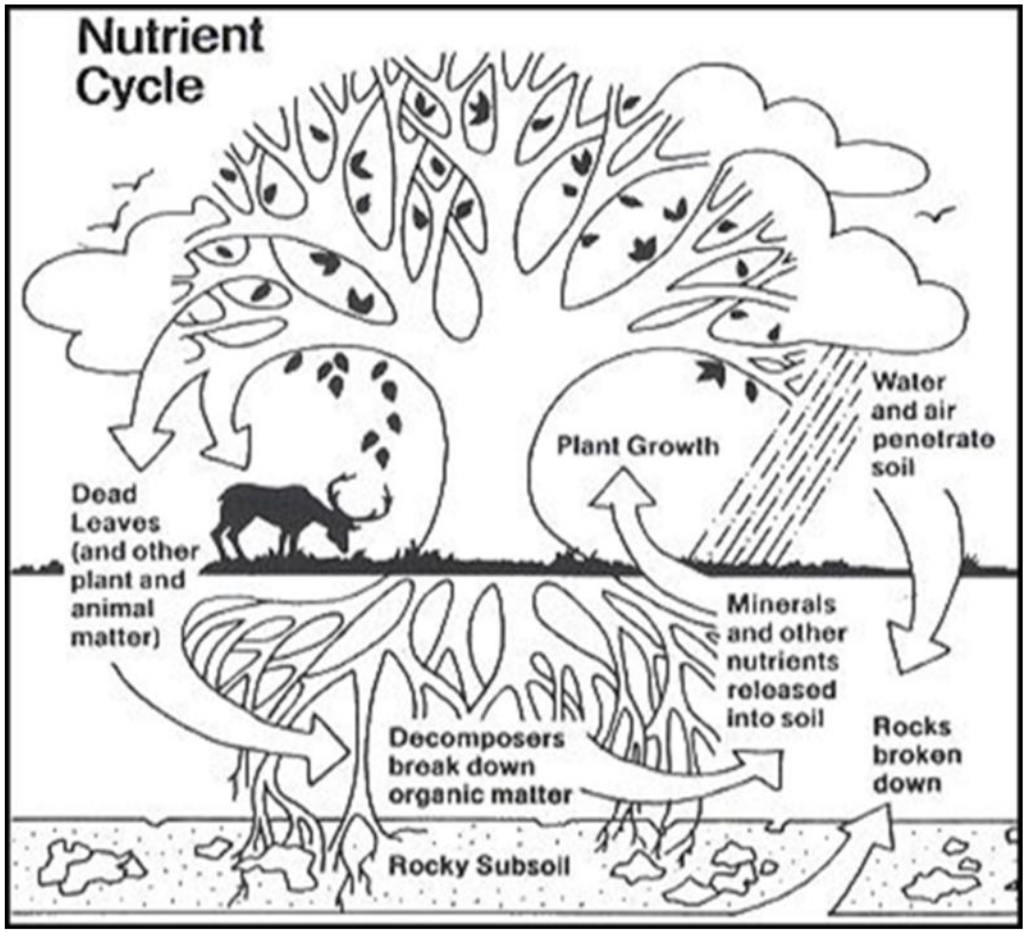
Land equivalent ratio (LER): the **ratio** of the area under sole cropping to the area under intercropping needed to give equal amounts of yield at the same management level. It is the sum of the fractions of the intercropped yields divided by the sole-crop yields.

	Yield in polyculture (Yp)	Yield in monoculture (Ym)	Partial LER (Ypi/Ymi)	Total LER for polyculture
Variety A	1000	1200	0.83	$\sum$ (Ypi/Ymi)=1.63
Variety B	800	1000	0.80	

Journal of Central European Agriculture Vol 7 (2006) No 2

Agricultural System classification

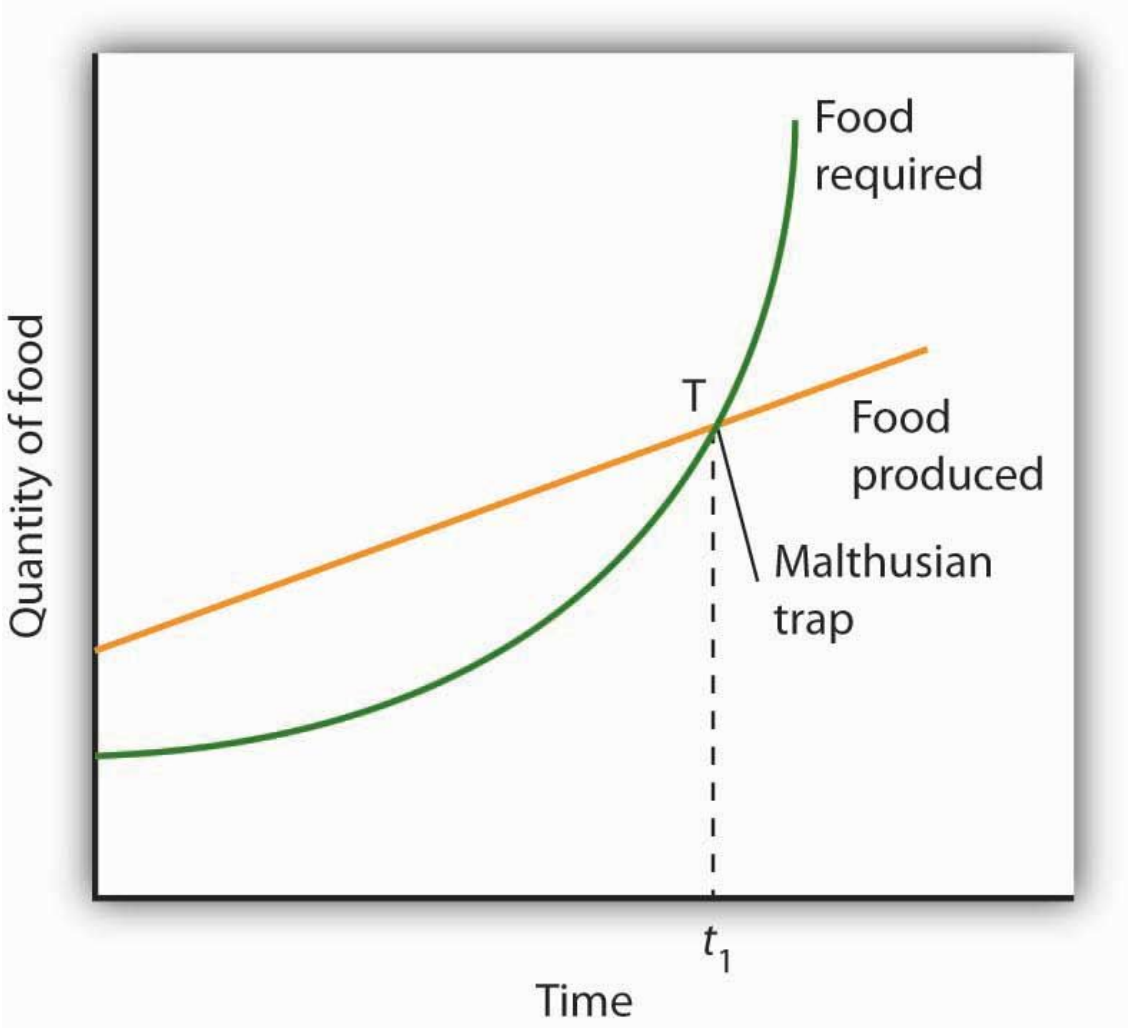
Natural

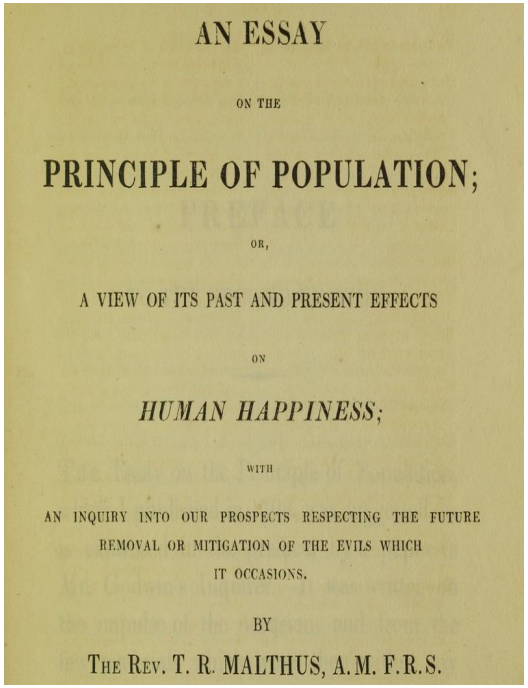


Agricultural System classification

Indigenous/Traditional

Thomas Malthus




AN ESSAY

ON THE

PRINCIPLE OF POPULATION;

OR,

A VIEW OF ITS PAST AND PRESENT EFFECTS

ON

HUMAN HAPPINESS;

WITH

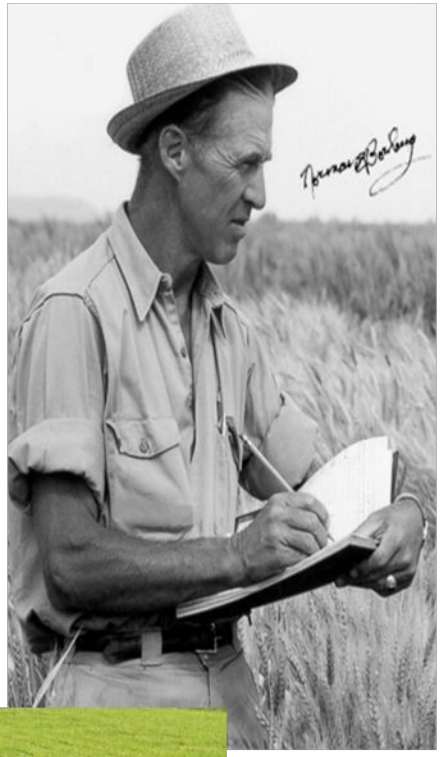
AN INQUIRY INTO OUR PROSPECTS RESPECTING THE FUTURE REMOVAL OR MITIGATION OF THE EVILS WHICH IT OCCASIONS.

BY

THE REV. T. R. MALTHUS, A.M. F.R.S.

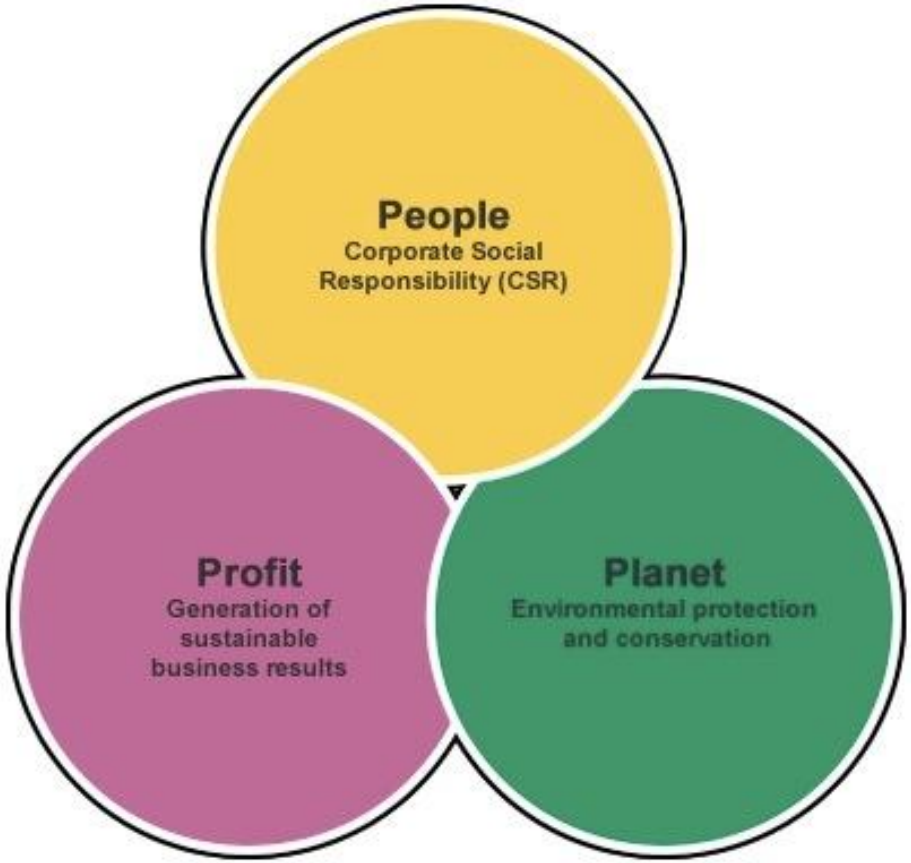
Agricultural System classification

Conventional



Agricultural System classification

Sustainable



Organic is… Unconventional

Early 1800s, Synthetic fertilizer invented

1913, Nitrogen fertilizer mass produced

1924, Rudolf Steiner; Demeter Association; Biodynamics

1931, Albert Howard; soil health = plant health

1936, Mokichi Okada; Nature farming

1943, Lady Eve Balfour; *The Living Soil*

1947, J.I Rodale; Soil and Health Foundation

1950, DDT and other synthetic biocide use in agriculture rapidly expands

1960, Rachel Carson; Silent Spring

1971, International Federation Organic Agricultural Movements

1970's; Agroecology and Indigenous systems

1990, US Organic Foods Act

2000, Local food systems

2016 Certified Organic Survey

- $13.4 million in certified organic products.

- 7,163 acres of certified land in Hawaii,
  - 6,597 acres were cropland and
  - 566 acres were pastureland/rangeland.

- The top two certified commodities sold in Hawaii were
  - vegetables grown in the open with sales valued at $3.3 million and
  - fresh fruits with sales valued at $2.3 million.

- For more information: www.nass.usda.gov/organics.

Certification

- Legal definition of "organic" products.
- Annual inspections, record keeping critical
- 3-year waiting period for certification if land was previously managed with restricted inputs

India Organic

USDA ORGANIC

IN-ORG-004
Non-EU Agriculture

CONTROL UNION
CERTIFIED
NPOP/NAB/0010

Table 1. List of USDA accredited third party certifiers operating in Hawaii. Compiled from: USDA National Organic Program List of certified USDA organic operations (https://organic.ams.usda.gov/Integrity/). Accessed 03/01/17.

Certification Agency (listed in alphabetical order)	Website	Phone	Number of operations certified in Hawai'i	Percentage of operations certified in Hawai'i
A Bee Organics	abeeorganic.com	(760) 731-0155	2	1%
CCOF Certification Services	ccof.org	(831) 423-2263	6	4%
Ecocert	ecocert.com/en	+33(0) 5 62 07 34 24	1	<1%
International Certification Services	ics-intl.com/index.html	(701) 486-3578	96	60%
Onecert	onecert.com	(402) 420-6080	1	<1%
Organic Certifiers	organiccertifiers.com	(805) 684-6494	42	26%
Oregon Tilth Certified Organic	tilth.org	(503) 378-0690	6	4%
Quality Assurance International	qai-inc.com	(858) 200-9704	1	<1%
Quality Certification Services	quality-certification.com	(608) 848-6455	1	<1%
Stellar Certification Services	demeter-usa.org/stellar-certification/	(541) 929-7148	3	2%
TOTAL			**159**	**100%**

Name UH CTAHR Waimanalo Research Station Completion date

***Code: O=Organic; T=In Transition/conversion to organic; C=Conventional

Field No.	Acres	2016		2017		2018		2019	
		Crop	Code	Crop	Code	Crop	Code	Crop	Code
J2	3.0	Taro 1/2 acre Papaya ¼ acre Sweet Potato ¼ acre Mixed Vegetables 1 acre Figs (1/8 acre) Covercrops (Lab-Lab, Sorghum-Sudan grass, Buckwheat, Sunnhemp) 2acre Sugarcane ¼ acre 'awa ¼ acre	O	Taro 1/2 acre Papaya ¼ acre Sweet Potato ¼ acre Mixed Vegetables (Tomato, Pumpkin, Turmeric, Mustard Eggplant, Broccoli) 1 acre, Figs (1/8 acre) Covercrops (Lab-Lab, Sorghum-Sudan grass, Buckwheat, Sunnhemp) 2acre, Sugarcane ¼ acre 'awa ¼ acre	O	Taro 1/2 acre Papaya ¼ acre Sweet Potato ¼ acre Mixed Vegetables (Tomato, Pumpkin, Turmeric, Mustard Eggplant, Broccoli) 1 acre, Figs (1/8 acre) Covercrops (Lab-Lab, Sorghum-Sudan grass, Buckwheat, Sunnhemp) 2acre, Sugarcane ¼ acre 'awa ¼ acre Ashwaganda	O		
Field Information Organic		Cover crop, M-pede, Kumulus DF, DiPel Bt, Spinosad, Pyganic, Compost tea, Mar Y Tierra 5-1-1 Seaweed Crème, Sustain 4-6-4, BioFlora 6-6-5		Cover crop, M-pede, DiPel Bt, entrust, Pyganic, Sustain 8-2-4, Tankage (island commodities)		Cover crop, M-pede, DiPel Bt, entrust, Pyganic, Sustain 8-2-4, Tankage (island commodities)			
L2	1.7	Mango ½ acre Breadfruit ½ acre	O	Mango ½ acre Breadfruit ½ acre	O	Mango ½ acre Breadfruit ½ acre	O		
Field Information Last appl of prohibited materials 2006		Cover crop, M-Pede, Kumulus DF, DiPel Bt, Spinosad, Pyganic, Compost tea, Peat Moss, Mar Y Tierra 5-1-1 Seaweed Creme, Sustane 4-6-4, BioFlora 6-6-5		Cover crop, M-pede, DiPel Bt, entrust, Pyganic, Sustain 8-2-4, Tankage (island commodities)		Cover crop, M-pede, DiPel Bt, entrust, Pyganic, Sustain 8-2-4, Tankage (island commodities)			

Producer Input List - Crop

Business Name: UH CTAHR Waimanalo & Poamoho Research Stations Completion date: 8/1/19

Name: Ted Radovich

NOP §§ 205.100(a), 205.103, 205.105, 205.200, 205.201(a)(2), 205.202(b) 205.203(d,e), 205.206(e,f), 205.238, 205.270, 205.271, 205.272, 205.400 (b&f), Subpart G National List of Allowed and Prohibited Substances
COR CAN/CGSB-32.310-2015 §§ 1.4, 4.4, 5.3, 5.4, 5.5, 5.6, 6.4.4, 6.6, 8; CAN/CGSB-32.311-2015 Permitted Substances List

- Complete the following table listing all input materials in use or intended for use during the current season. Inputs for all crops should be identified, whether production is Organic/O, Transition/T, or Conventional/C. Label/MSDS for materials used for O and/or T production must be provided. Labels for materials used only in C production are not required. Attach additional pages if necessary.

☐ Additional Pages Attached ☐ Not Applicable; no inputs used

Brand Name & Generic Material	Manufacturer and/or Distributor name	Use: Location & Reason / Purpose (Fertility, Pest, Disease, etc.)	(C) Current Use (P) Planned for Use	Use: Organic (O) Transition (T) Conventional (C) Production	Label or MSDS Attached?
Example: N-Dure Premium Non-Sterile Peat Inoculant for Pea, Vetch and Lentil; Microbial Inoculant	*Verdesian Life Sciences, US LLC*	*Inoculant: field 6*	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
M-pede/insecticidal soap	Gowan Co	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
Dipel / Bt	Valent BioSciences	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
Xentari / Bt	Valent	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
Entrust / Spinosad	Dow AgroSciences	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
DeBug Turbo / Azadirachtin + oil	Agrologistic	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒
Neemix / Azadirachtin	Certis	Pest control	☒ (C) ☐ (P)	☒ Organic/O ☐ Transition/T ☐ Conventional/C	☒

Inspector's Signature _____ Date _____

Crop: Seeds/Seedlings/ Planting Stock:	Variety	Source	Status of Seed, Seedling, and/or Planting stock:	Treated/Type of Treatment *(Inoculants, coatings, etc.) Include on Field History Sheet and Producer Input List*
Taro	attached	UH collection	☒ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Papaya	Waimanalo low bearing, Sunrise	UHM organic plots	☒ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Labalab	unknown	Koolau Seed and Supply	☐ Organic ☒ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Sunnhemp	Tropic Sun, South African	Koolau Seed and Supply	☐ Organic ☒ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Buckwheat	unknown	Peaceful Valley	☒ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
			☐ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
			☐ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Sweet potato	See attached	Cuttings from organic plots	☒ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
sugr cane	Manulele, 'Ula, Honua 'Ula, Pakaweli, Puaiole, Uahiapele, Halalii	Cuttings from UHM organic plots	☐ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
Ashwaghanda	India	SeaSons Organics	☒ Organic ☐ Non-organic, Non-GMO ☐ Seed Search Completed	☒ Untreated ☐ Treated; identify the treatment:
'Awa	Hiwa	Cutting from Nearby field	☐ Organic ☒ Non-organic, Non-GMO ☐ Seed Search Completed	☐ Untreated ☐ Treated; identify the treatment:

Inputs (select examples)

- Allowed
  - Compost, no manure
- Restricted (Allowed w/restrictions)
  - Compost, with manure
  - Any organic pesticides
  - Some synthetic inputs
- Prohibited
  - Most synthetic inputs (but not all)
  - Human manure
  - Radiation
  - Genetically engineered organisms

OMRI™

Listed

Organic Materials Review Institute

REGISTERED MATERIAL

For Use In Organic Agriculture

Washington State Dept. of Agriculture

Dow AgroSciences

Entrust®

Naturalyte® Insect Control

A Naturalyte® insect control product formulated for the organic grower. For control of lepidopterous larvae (worms or caterpillars), leafminers, and thrips in asparagus, bushberries, caneberries, cereal grains, citrus, cole crops, corn (field corn, sweet corn, popcorn, and corn grown for seed) and teosinte, cotton, cranberry, cucurbits, fig, fruiting vegetables (okra, tomatoes, peppers and eggplants), grape, herbs, leafy vegetables, leaves of root and tuber and legume vegetables, peanut, pome fruits, potatoes and tuberous and corm vegetables, root vegetables, soybean, stone fruits, strawberry, succulent and dry beans and peas, tree farms or plantations, tree fruits, and tree nuts and pistachios, and for control of red imported fire ants.

This bag [container] is not for individual resale.

Refer to inside of label booklet for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

EPA Reg. No. 62719-282 900-012689 / 00216558

®Trademark of Dow AgroSciences LLC
Dow AgroSciences LLC • Indianapolis, IN 46268 U.S.A.

04-5262/R8

Biological Insecticide

DiPel® DF

Dry Flowable

For Organic Production

Active Ingredient:
Bacillus thuringiensis, subsp. *kurstaki*, strain ABTS-351, fermentation solids, spores, and insecticidal toxins 54%
Other Ingredients 46%
Total 100%
Potency: 32,000 Cabbage Looper Units (CLU) per mg (14.5 billion CLU per pound)

The percent active ingredient does not indicate product performance and potency measurements are not federally standardized.

PyGanic

- Contains pyrethrum—a botanical insecticide derived from chrysanthemums
- Provides rapid knockdown and kill of plant pests
- For use on growing crops and ornamentals
- Can be used on day of harvest
- Controls key livestock pests
- Controls more than 100 insects

ACTIVE INGREDIENT:	
Pyrethrins	1.40%
OTHER INGREDIENTS	98.60%
	100.00%

KEEP OUT OF REACH OF CHILDREN

CAUTION PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

See Inside Booklet for First Aid and Additional Precautionary Statements

EPA Reg. No. 1021-1771
Rev. 0707-0908

EPA Est. Nos. 1021-MN-2A, 48498-CA-01²
Superscript is the first character of the lot number.
F7443-100

NET CONTENTS 1 GALLON

Manufactured by:
MGK®
8810 Tenth Avenue North, Minneapolis, MN 55427

FOR ORGANIC PRODUCTION
OMRI

Dow AgroSciences™

M-Pede®

Insecticide/Fungicide

Active Ingredient	
Potassium salts of fatty acids	49%
Other Ingredients	51%
Total	100%

OMRI

Listed by the Organic Materials Review Institute (OMRI) for use in organic production.

For additional Precautionary Statements, First Aid, Storage and Disposal and other use information see inside this label.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

EPA Reg. No. 62719-515

(88) (2N) (2W)

EPA Est. 5905-IA-01; 34704-MS-2; 4901-TN-001
Superscripts correspond to places 7 & 8 of lot number
900-014943 / 00261475

Keep Out Of Reach Of Children

WARNING AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

®Trademark of Dow AgroSciences LLC

Produced for
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268

EARTH RECYCLING HAWAIIAN 100% NATURAL

Organic soil products since 1993 *Makers of* MENEHUNE MAGIC COMPOST

OAHU (808) 682-5895 | BIG ISLAND (808) 935-2277

SOIL PRICES & PRODUCTS
MATERIAL DROP OFF
MORE ABOUT US

SOIL CONDITIONER

Improves overall health of existing soil; Adds nutrients to increase growth.

100% Organic
OMRI Listed
Menehune Magic, Soil Conditioner Compost
Screened to 7/16-inch minus particle size.

PRICED AT
$37 / yard $7.35 / bag

GREAT FOR
Amending raised beds & gardens
Amending landscape Top dressing lawns
Lawn installation

You may notice that our search now yields more comprehensive results, and that our advanced filters stay hidden until you choose to refine your search parameters. Learn more about the new features and functionality at omri.org/omri-search.

OMRI Search

Filters

Website Content Filters

Frequently Asked Questions | Manufacturer | Site Content
Press Release | Materials Article

Ruling Body Filters

Material Type Filters

Category | Livestock Vitamins Minerals | Product

Status Filters

Allowed | Allowed with Restrictions
Prohibited

Class Filters

Crops: CF CT CP
Livestock: LP LF LH LT
Processing: PA PI PN PC PP PS

Clear Filters

Within Your Current Search Results

Click on a type below to view only that type within your results

Site Content (82)

82 Total Results for ""

1 2 3 4 5 next > last >>

About OMRI Listed Products

The OMRI Listed® seal assures the suitability of products for certified organic production, handling, and processing under the following conditions:

* For certified organic farmers, the product must be included in the

Composted Plant Residues

CF

RULING BODY: LPO
STATUS: Allowed
CLASSIFICATIONS: Crop Fertilizers and Soil Amendments
DESCRIPTION: Must be free of prohibited substances. Composting processes shall: I. Establish a maximum initial C/N (Carbon/Nitrogen) ratio between 25:1 and 40:1, of the materials used of animal or plant origin; II. In composting using a vessel, stack or static aerated pile system, the temperature shall be maintained between 55° C and 77° C for a minimum of three days with turning, or III. In the case of composting using a windrow composting system, the temperature shall be maintained between 55° C and 77° C for a period of 15 days minimum, in which at least five turnings were performed. In biointensive composting, a minimum number of turnings is not required.
RULE REFERENCE: LPO Guidelines Annex 1, Table 1; LPO Guidelines Article 43
DATE ACTIVE: 30-Jun-2020

Sewage Sludge

RULING BODY: NOP
STATUS: Prohibited
CLASSIFICATIONS: Crop Fertilizers and Soil Amendments
ORIGIN: Synthetic
DESCRIPTION: Also called biosolids. See Glossary for definition of "sewage sludge."
RULE REFERENCE: NOP Reference 205.105(g) & 205.203(e)(2)
DATE ACTIVE: 4-Apr-2019

International Certification Services, Inc.

Certificate of Organic Operation

University of Hawaii, College of Tropical Ag &
Human Resources; Waimanalo & Poamoho
Research Stations
41-698 Ahiki St.
Waimanalo, HI 96795
UNITED STATES
Tel: 808-956-7909
theodore@hawaii.edu

Client ID Number: 1011116
Certificate Number: ICS-21631-2019
Effective Date: 09/21/2012
Issue Date: 03/12/2020
Last Inspection Date: 12/17/2019
Anniversary Date: 11/01/2020

Categories of Organic Operation: Crops

Certified Organic to the
USDA National Organic Program

Certified Organic to the USDA National Organic Program regulations, 7CFR Part 205. Once certified, a production or handling operation's organic certification continues in effect until surrendered, suspended or revoked.

International Certification Services, Inc. (ICS Inc.), in granting this certification, warrants it has reviewed the above Certified Party's application, inspection, and other records and determines the products identified on the schedule are organically grown and/or handled in accordance with applicable USDA National Organic Program standards and regulations.

This certificate is not valid without attached Organic Certification Schedule.

Customers of the ICS client named on this certificate are encouraged to contact the ICS office to confirm the client's current certification status.

INTERNATIONAL CERTIFICATION SERVICES, INC.
PO Box 517/301 5th Ave SE, Medina, ND 58467, USA
(701) 695-2080 - Fax: (701) 695-2081 www.ics-intl.com

Christina Dockter	Vice President of Operations	03/12/2020
ICS Signature	Title	Date

5-CE101
01/27/2020

International Certification Services, Inc.

Organic Certification Schedule

University of Hawaii, College of Tropical Ag &
Human Resources; Waimanalo & Poamoho
Research Stations
41-698 Ahiki St.
Waimanalo, HI 96795
UNITED STATES

Client ID Number: 1011116
Certificate number: ICS-21632-2019
Effective Date: 09/21/2012
Issue Date: 03/12/2020
Last Inspection Date: 12/17/2019

Categories of Organic Operation: Crops

This operation is in compliance with the following standards and programs:

USDA National Organic Program
Certified

This schedule is documentation of the organic status of products, crops, livestock, products and services of ICS certified entities, and **is not valid without the Certificate of Organic Operation**.

Crops

100% organic

Crop	Variety	Comment	Programs
Awa		Research	NOP
Breadfruit		Research	NOP
Eggplant		Research	NOP
Figs		Research	NOP
Mango		Research	NOP
Noni		Research	NOP
Papaya		Research	NOP
Pumpkins		Research	NOP
Sugar Cane		Research	NOP
Sweet Potatoes		Research	NOP
Taro		Research	NOP
Tomatoes		Research	NOP
Turmeric		Research	NOP

0-CE102
08/22/2018