



## Advice on Obtaining Seeds of Green Manure and Cover Crops in Hawai'i

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There is much interest in growing plants for soil improvement and protection. Cover crops help keep soil in place, protecting it from raindrop impact, preventing surface sealing, and helping maintain its structure. Green manure crops incorporated into the soil add nutrients and organic matter, enhancing soil structure and nutrient availability, and supporting beneficial soil organisms. Both types of crops can add nitrogen to the soil if they are nitrogen-fixing plants. In some cases, certain plants grown in crop rotations are helpful in managing soil populations of plant-parasitic nematodes. There is also interest in obtaining plant species for pasture improvement. In recent years, numerous CTAHR publications have described plant species suitable for these purposes (see p. 2). Unfortunately, locating and obtaining seeds or other propagation material for the plants recommended is often challenging and expensive.

For example, the legume sunn hemp (*Crotalaria juncea*) has become widely recognized for its utility as a green manure, and a cultivar, 'Tropic Sun', was selected in Hawai'i about 25 years ago. Despite the enthusiasm that 'Tropic Sun' generated, its seed is not readily available at present. Much of the sunn hemp seed obtainable lately from Hawai'i or mainland seed companies is from South Africa. There currently is a worldwide shortage of sunn hemp seed, and it is expensive and difficult to obtain. Growers who wish to use this crop are urged to start their own seed-increase plantings. Small quantities of seed for increase plantings may be obtained from the Natural Resources Conservation Ser-

vice. It is possible that 'Tropic Sun' sunn hemp seed will become commercially available from sources in Hawai'i within a year or so.

### Importation concerns

One concern about importing seeds to Hawai'i from outside the state is the quality of the seed lot, and the chance that it is contaminated with weed seeds. Another consideration is complying with our quarantine and seed import regulations established by the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, as well as those established by the Hawai'i Seed Law and Rules and regulated by the Hawai'i Department of Agriculture. A third area of concern that has gained more recognition lately is the potential for contamination of our native ecosystems by alien, invasive plant species (see, for example, the website of the Hawai'i Ecosystems at Risk project, [www.hear.org](http://www.hear.org)). Risk-assessment profiles are being developed for plants to gauge their invasiveness, and these assessments may be in conflict with motivations for their agricultural use.

### Looking for seed sources

When purchasing seeds, we advise that you consult Hawai'i seed suppliers first. If they cannot meet your needs, it is usually easier to purchase from U.S. mainland companies than from those in foreign countries, even if the seeds were sourced from a foreign country. Seeds from the U.S. mainland are considered interstate

commerce and are not subject to the strict inspections and quarantine regulations that apply to seeds coming directly from foreign countries. The U.S. companies have already dealt with the import quarantine protocols for you. Seed shipments from foreign countries must be accompanied by a phytosanitary certificate and may be refused entry into the U.S. mainland and Hawai'i because of contamination by seeds of prohibited species, weed seeds, soil, or for other reasons.

The Internet is a valuable tool for locating seed companies and learning about which plants they offer. In addition, extension agents at county offices of the UH-CTAHR Cooperative Extension Service may be able to

provide advice, as can staff of the USDA Natural Resources Conservation Service's Hawai'i offices.

Commercial seed sources in Hawai'i known to the authors at the present time are

Hikiola Co-op, P.O. Box 544, Hoolehua, HI 96729, 808-567-6774

Koolau Seed and Supply, Inc., 48-373G Kamehameha Hwy, Kaneohe, HI 96744, 808-239-1280

**Mention of a company name does not constitute an endorsement by the University of Hawaii Cooperative Extension Service or its employees and does not imply recommendation to the exclusion of other suitable companies. Commercial seed providers in Hawai'i who wish to be included in this listing should send details on plant materials available and contact information by e-mail to [ctahrpub@hawaii.edu](mailto:ctahrpub@hawaii.edu).**

## CTAHR information on green manure, cover, and improved forage crops

UH-CTAHR has been publishing information on plants suitable for Hawai'i and useful as green manures, cover crops, and improved forages for over a century. The species listed below are only those featured in recent CTAHR publications and databases available on our websites (see publications at [www.ctahr.hawaii.edu/freepubs](http://www.ctahr.hawaii.edu/freepubs) under two categories: Sustainable Agriculture, and Livestock Management; see the databases at [www.ctahr.hawaii.edu](http://www.ctahr.hawaii.edu) under Environment / Sustainable Agriculture / Green Manure and Cover Crop Databases). Older CTAHR and Hawai'i Agricultural Experiment Station publications on these types of plants can be found through the Hawai'i State Library System and UH libraries. Some ways to search for documents by subject are available on the CTAHR website, which has databases that contain college publications, faculty journal articles, and student theses and dissertations, under Publications / Search. The UH Mānoa library catalog searcher, Voyager, is at <http://uhmanoa.lib.hawaii.edu>.

### Cover crops

#### **Non-legumes**

bahiagrass  
bermudagrass  
carpetgrass  
broadleaf\*  
narrowleaf  
pangolagrass (digitgrass)\*  
Rhodesgrass  
St. Augustinegrass\*  
stargrass\*  
'Tropic Lalo' paspalum\*

#### **Legumes**

perennial peanut  
stylo  
white clover

### Green manure crops

#### **Non-legumes**

annual ryegrass  
azolla\* (for flooded taro)  
barley  
buckwheat  
oats  
common  
black  
rye  
sorghum-sudangrass hybrids

#### **Legumes**

cowpea  
lablab  
pigeonpea  
'Tropic Sun' sunn hemp  
white sweetclover  
woollypod vetch

### Improved forages

#### **Non-legumes**

kikuyugrass  
pangolagrass\*  
signal grass  
stargrass\*

\*Denotes species that are only propagated vegetatively, not by seed. Some species used as turf, such as St. Augustinegrass, may be available from nurseries and turf suppliers. Ranchers often share propagation materials for improved pasture species among themselves. UH-CTAHR's Mealani Research Station in Waimea has demonstration plantings of forage species (see [www.ctahr.hawaii.edu/forages](http://www.ctahr.hawaii.edu/forages)) from which small amounts of propagules can be obtained for increase plantings. NRCS field agents may be able to provide small amounts of propagules from their Plant Materials Center.