Hubam Annual
White Sweetclover

*(Melilotus alba)* c.v. Hubam, a cultivated annual variety of white blossom sweet clover

Hubam is a summer annual sweetclover that is adapted from Georgia to Maine. It blooms and sets seeds in the planting year. Its value is largely in its soil health benefits (including nitrogen fixation) and its ability to attract pollinators with its abundant nectar production.

**Planting:** Hubam clover can be frost-seeded in late winter or spring seeded as a summer annual. Spring seeding should be done in early spring, about oat-planting time, because sweet clover seed requires a good supply of moisture and cool temperatures for germination and early seedling growth.

It can be planted from early spring to July. With a summer planting, it will bloom until frost. Staggered sequential planting dates can be used to ensure continuous nectar flow throughout the summer and fall. **However, later plantings are less successful with limited moisture.**

For successful overwintering, plant no later than late summer (mid-August to early September in the mid-Atlantic region), or 5-6 weeks before the first killing frost. Sweetclover grows very slowly for the first 60 days, and a timely planting is critical for growing enough root biomass for winter survival – and blossoms early in the spring.

**Sweetclover is highly tolerant of frost and cold temperatures.** It can be used as an overwintering cover crop more successfully than crimson clover in northern climates, and would be a good component in cover crop mixes for the Northern US. The plants have evolved "contractile" roots which pull the plant crown down into the soil in the fall, this allows the plant to more successfully survive cold winter temperatures.

**Seeding rate:** Drill 12 to 15 lbs/acre, seeding depth 1/4” to 1/2” deep, but not deeper than 1/2”. **Broadcast:** 20 to 25 lbs/acre. Seed can be broadcasted on double disked ground and packed for successful germination.

**Frost seeding:** 20 to 30 lbs/acre in February/Late winter.

Can also be over-seeded into corn at 6” to 8” tall and used in interseeding mixes. In vegetable rotations it can be seeded in between rows of brassica crops or in farmscaped strips around or between produce beds.
Note – Since Hubam is a very small seed and has a hard seed coat, initial germination and growth is slower. Germination will be improved if the seed can be “scarified” or scratched. Because of this slower start, it will do better in mixes with nurse or companion crops. For summer pollinator mixes, consider planting it with buckwheat, phacelia, sunflower, cowpeas, and other white and red clovers. It can also be seeded with spring oats, spring barley, or flax. *(Keep seeding rates at 6-10 lbs/A in mixes.)* After these companions are harvested, the Hubam Sweetclover can be left to grow for the remainder of the summer.

For diverse clover bee pastures, Hubam annual white sweet clover can be mixed with other perennial clovers such as medium red clover and/or white clover. Or mix it with our 3-Way Clover Mix (medium red clover, ladino white clover and yellow blossom sweet clover) for a 1-2 year diverse strip of multiple clovers for a longer season of bloom to feed the bees.

**Soil pH range:** Sweet clover tolerates a wide pH range from 5.6 to 8.2. This includes both slightly acidic and higher pH levels of alkaline soils, but we recommend a pH of 6.5 to 6.8 for best rhizobium bacteria inoculation and survival. If the soil pH is lower than 6, apply lime ahead of planting this crop for best growing results. Acidic soil’s pH affects rhizobium inoculation, and pH ranges below 6.2 will have poorer inoculation and nodulation.

*Use Sweetclover type inoculant.*

**Typical Growing Height Range:** 39 to 78 inches, depending on available fertility and moisture.

**Flowering Range:** When spring seeded - Late July to September; when fall seeded - bloom may begin the following May.

**Seed Set & Maturity:** Late June to November, depending on location.

**Cover crop Biomass:** When spring planted or frost seeded, it can produce 2,000 – 3,500 lbs/A. When planted in fall for overwintering, it can produce 2,000 – 8,000 lbs/A. Most growth occurs in late spring into summer, which is better for producing nitrogen and biomass before a fall-planted winter grain than what you would expect from a traditional overwintering cover crop grown before corn.

**Nitrogen contribution as a green manure:** Nitrogen is typically 2 percent of biomass; frost or spring seeded Hubam sweetclover can accumulate 40-70 lbs/A of N by late summer/early fall, of which about half (20 -35 lbs/A) is available the first year after termination.

With a fall planting that overwinters into the following year, 40-160 lbs/A of N can be accumulated by late summer or fall, with about 20-80 lbs being available within the first year after termination.

**Note herbicides in Rotation:** White sweetclover is herbicide sensitive to broad leaf herbicides, especially 2,4-D.
What to Know

Pollinator Benefits

- Attracts honeybees and many other beneficial insects, such as Tachinid flies and other large predatory wasps.
- High nectar producer. Once it begins flowering, it will flower for about two months, because of the sheer number of flowers (up to about 1500 flowers on a single plant) and the irregularity of bloom.
- Produces nectar from morning into late afternoon during summer months. This is a longer nectar flow than other summer annual nectar producers, such as buckwheat, which will shut down their nectar production in the afternoon.
- Both pollinator and soil improvement attributes.
- Grow in riparian buffers to enhance farm-scaping, where it may re-seed itself for long-term growth as a pollinator.

Soil Health & Fertility Benefits

- If left to grow through the summer, the strong tap roots grow down anywhere from 25 to 95 inches, helping to alleviate clay hard-pans, open up heavy soils, and sequester carbon at deeper soil levels. These deep roots also mine and bring up nutrients that have leached down deep.
- After about a month of top growth, the plant starts to put its energy into growing deeper roots, which will eventually supply moisture and essential nutrients to help the steady flow of nectar during flower bloom.
- Tolerates variable soils – can be grown on clay soils or lighter sandy soils.
- Tolerates wet soil and salinity.
- Root exudates have the ability to make insoluble forms of potassium and phosphorous available for the plant and for plants grown in subsequent rotation.
- This crop is a strong nitrogen fixer and should be considered a soil health builder (enhancing soil life) as well as a soil fertility booster.
- Helps to recycle nutrients and open up no-till soils - roots create paths for water infiltration.
- Heat tolerant annual crop, will go to seed in the first year if planted early in spring.
- Cold and frost tolerant.
- Tall, erect (decumbent), stemmy growth, not considered best as a forage, but excellent for biomass production to improve soil organic matter.
- Resistant to cold, frost tolerant.
- Should not be considered as a livestock feed in straight stands, because the crop contains coumarin, toxic to livestock.
VALUE ELSEWHERE IN UNITED STATES AND ABROAD
Hubam clover has been grown in every state in the Union, in every province of Canada, and in many foreign countries. Good reports from many of these regions under ranging soil conditions indicate that Hubam clover has a wide adaptation. It has been grown with success on many different soil types, in high and low altitudes, in the south and in the north; in sections of high rainfall and of low rainfall, as well as under irrigation. It usually can be grown anywhere that alfalfa or biennial sweet clover will grow. It has also worked where these legumes have been unsuccessful. The extent to which Hubam will fit into specific cropping systems in various regions remains to be determined.

VALUE AS BEE PASTURE
Hubam is an excellent bee pasture and has been tested extensively for this purpose by many large beekeepers. The crop produces exceptionally high quality honey. With early spring planting, Hubam begins to bloom two to three months after planting and flowers abundantly long after most of the other bee pastures are gone.

MY OWN EXPERIENCE WITH HUBAM CLOVER
Dave Wilson, Research Agronomist
I’ve walked through fields of Hubam Clover so thick with honeybees and other pollinators that I could hear a constant hum or buzz from the frantic, continuous foraging activity of all the winged creatures. The inflorescence of the plants were completely loaded with bees, to the point that the branches would bend over from the weight of the bees clinging to them and foraging. It was quite a sight. Bees literally climbed over each other to get access to the abundant, sweet nectar flow from the flowers. I have been stung by bees while conducting field work in other crops, but these bees were so preoccupied with feasting on the sweetclover flowers that they barely noticed I was there.

This is an excellent thing, especially with current concerns about the decline of the honeybee population. This source of nectar and pollen is a manageable way to feed these bees with a resource they need, and can more successfully feed their brood.

I advocate planting even small strips of this crop on farms of all types, since it will not only improve honeybee populations, but boost populations of a variety of beneficial insects and pollinators on which most crops rely – in addition to its soil health and fertility benefits.