



Conservation Systems Research

Nitrogen from Legume Cover Crops

CONSERVATION SYSTEMS FACT SHEET NO. 08

United States
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Research



Root nodules on white lupin house bacteria responsible for nitrogen fixation. *Photo courtesy of E. van Santen, Auburn University.*

Fact
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Legume cover crops can produce up to 350 pounds of nitrogen per acre in Southeastern conservation systems. They may also provide benefits such as control of erosion, weeds, and nematodes, habitat for beneficial organisms, and forage. Some are good scavengers of phosphorus and potassium. Some break up compacted soil layers with their tap roots.

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Crimson Clover

Trifolium incarnatum

– up to 150 lb N/acre

One of the most common cover crops in the Southeast, newer varieties mature earlier and form seeds before termination.

- Good residue persistence.
- Erosion control.
- Weed control.
- Attracts beneficials.
- Scavenges nutrients.
- Excellent forage quality.

Winter Pea

Pisum sativum

– 90 to 150 lb N/acre

Peas produce lots of biomass and are especially popular in the cooler zones of the Southeast.

- Good forage quality.
- Attracts beneficials.
- Erosion control
- Weed control





White Clover

Trifolium repens

– 80 to 130 lb N/acre

A perennial, white clover is a good choice for living mulch systems. It is excellent for controlling erosion and attracting beneficial insects.

- Erosion control.
- Weed control.
- Attracts beneficials.
- Excellent forage quality.

Hairy Vetch

Vicia villosa

– 90 to 200 lb N/acre

Hairy vetch grows aggressively in the spring. It is effective at smothering weeds but can also be a challenge to control when planting the following cash crop.

- Erosion control.
- Weed control.
- Attracts beneficials.
- Scavenges nutrients.



Iron Clay Cowpea

Vigna unguiculata

– 100 to 150 lb N/acre

A popular summer annual in the Southeast. Quick growth makes it excellent for weed suppression and erosion control. Tolerates heat, drought, poor soils, and moderate shade.

- Good forage quality.
- Attracts beneficials.
- Erosion control
- Weed control

Lupin

Lupinus spp.

– up to 350 lb N/acre

Lupins are very cold-tolerant and have taproots that can breakup compacted soil layers. They can provide resistance to diseases, insects, and nematodes.

- Reduces soil compaction.
- Weed control.
- Nematode control.
- Erosion control.
- Attracts beneficials.



Velvet Bean

Mucuna pruriens var utilis

– up to 270 lb N/acre

A traditional summer annual in the Southeast. Viny growth makes it excellent for weed suppression and erosion control.

- Excellent nematode control.
- Weed control
- Erosion control
- Forage quality