

OATS

COVER CROP FACT SHEET FOR IOWA

Oats (*Avena sativa*) are a cool-season annual grass that grow quickly, reduce erosion, and provide quality livestock grazing. Oats usually winter kill in Iowa, so do not require spring termination.



Identifying Features

- » Hollow, straight stem; no auricles
- » Leaves are wider than other small grains
- » Leaves and stem may be waxy
- » Leaf sheath can be hairy
- » Ligule is pronounced and toothed

Cultural Traits

- » Cool-season annual grass
- » Minimum soil germination temperature: 38° F
- » Cold tolerance temperature: 25° F
- » Seeding date: Mid August to Mid September* (F)***
- » Seeding date: Early April to Late April (S)***

Planting Information*

- » **Drill** at ¾ - 1½ inches (60 lbs./acre PLS**)
- » **Broadcast** (66 lbs./acre PLS)
- » **Aerial** (75 lbs./acre PLS)

*Planting information from Midwest Cover Crop Council (midwestcovercrops.org). Refer to local NRCS office recommendations (Iowa Field Office Technical Guide, Section 4, 340 Cover Crop) for seeding dates and rates pertinent to location specific financial assistance program requirements.

**Pure Live Seed

***F=Fall S=Spring

Additional planting information:

- » ~15,000 seeds/lb. (1 bushel = 32 pounds)
- » If grazing or weed suppression is desired, increase seeding rate.
- » Broadcasting without incorporation is usually less dependable than drilling or broadcasting with incorporation.
- » Oats can be seeded in the spring as an additional cover crop option.



Oat Seed



Seedling



Vegetative



Cover crop grass growth comparison

C:N (Carbon:Nitrogen) Ratios

- » Oats 33:1

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Oats and clover in a northeast Iowa field.



Oats popping through the soil.

Performance

Dry matter = 1,000 - 4,000 lbs./acre per year
(Biomass quantity is dependent on planting and termination dates and precipitation.)

Performance Ratings

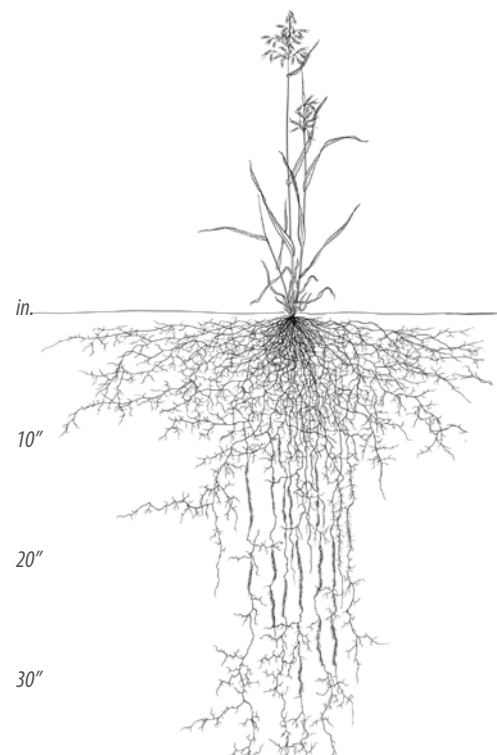
» Cash crop interseed (<i>early vegetative</i>)	Excellent
» Cash crop overseed (<i>late seed fill</i>)	Very good
» Grazing quality	Very good
» Mechanical forage harvest	Very good
» Nitrogen fixer	NA
» Nitrogen scavenger	Good
» Weed suppression	Good
» Compaction fighter	Good
» Erosion control	Very good
» Lasting residue	Good
» Quick grower	Excellent
» Drought tolerance	Good
» Low fertility tolerance	Good
» Shade tolerance	Very good

Additional Considerations

- » Use caution overseeding oats into soybeans. With adequate moisture and temperature, oats will grow fast and could become an issue while harvesting.
- » Aerial or broadcast spread pattern of oats will be narrower than other small grains due to the light weight of the seed.

- » Oats increase arbuscular mycorrhizal fungi (AMF) in the soil. AMF form a symbiotic relationship with plant roots which allows for greater nutrient and moisture uptake.

Oat Plant and Root Structure



Drawing provided by Conservation Cropping Systems Initiative (ccsin.org)

This fact sheet is a collaborative effort of USDA's Natural Resources Conservation Service (NRCS) and Iowa State University Extension and Outreach to provide cover crop options and information for Iowa landowners.