

OUR SCREENING PROCESS

Researchers at King's AgriSeeds are always evaluating new and experimental oat varieties for superior forage performance. Potential new products are evaluated over several years for consistently high performance across varying conditions. Results are quantified and analyzed alongside our current lineup of forage oat genetics. We look for high nutritional quality, yield, hardiness, and suitability as a companion crop, among other factors.



Demo plot of oats used as a nurse crop for alfalfa



Spring oats plots at Cornell, NY



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BEST MANAGEMENT

Harvesting an oat at preboot (full flag leaf emergence) or boot stage (when the grain swells in its sheath) will produce high quality forage, suitable for lactating cows or finishing beef.

When taken at this stage, oats are high in digestible fiber and have a crude protein level comparable to alfalfa at late bud stage. Their protein content is often higher than corn silage, but energy content is lower.

Oats can be planted in either early spring or late summer. Heading date is photoperiod sensitive, meaning it responds to day length. Heading may be delayed with a fall planting, but this allows for production of a higher volume of vegetative growth.

Higher seeding rates can yield oats with thinner stems and more digestible fiber.

PLANTING

Watch for herbicide carryover from the preceding crop, such as corn silage or other summer annuals, for fall planted oats. As a general rule, plant at least 60 days before the first frost date in your area for fall-planted oats, or as early as ground can be worked in the spring.

Plant at 3-4 bushels per acre, but cut back to around 100 lbs/A for very leafy, late-maturing types like Everleaf 126 (1 bushel=32 lbs). Seed at a depth of 1 to 1 1/2 inches. Apply 40-80 lbs of nitrogen at planting. An application of manure works well.

With effective weed control, no-till planting is a good option. Seeding rates should be increased slightly.

HARVEST

Cut and wilt at boot stage, bale and wrap at 32-35% moisture.

OATS AS A COMPANION/NURSE CROP

Oats are often planted as a "nurse crop" and provide shelter, weed suppression, and stability for a slower-growing crop, such as grass, alfalfa, clover, peas, or hairy vetch. In a nutritional sense, they also add highly digestible fiber and energy to an otherwise rich legume or brassica, slowing the rate of passage in the digestion process. If using oats as a nurse crop, cut the rate down to 1 bushel (32 lbs) per acre, without reducing the rate for the main crop. Oats also do well in mixes with other cool season small grains and grasses. Mixes provide multi-species vigor, and a fall-planted mix with winter annuals can add the convenience of both a fall and spring cutting.



Oats and Radish mix

OATS AS A COVER CROP

Although many oats winterkill with heavy frost, (not as common in southern regions) their rapid and abundant fall growth keeps soil covered, suppressing weeds and reducing erosion, which is ideal for leaving the field open for an early spring planting. Planted in either spring or fall, an oats seeding can provide a "catch crop," - uptaking and retaining nutrients after a manure application or during an empty space in the rotation. Even winter killed oats effectively cover soil and hold valuable nutrients in their tissues, which are gradually released as the residue is broken down by microbes.



Winter killed oats cover crop keep ground insulated & covered all winter.



FORAGE OATS

THE VALUE OF FORAGE OATS

Oats are a useful addition to a rotation because they produce a high volume of biomass (2-6 tons of dry matter per acre under good conditions) in a short time (60-75 days), and grow best in cool, moist conditions.

WHY FORAGE OATS?

Forage specific varieties provide the best vegetative yield and quality for an individual species. When you plant a forage crop, you want to use forage-specific genetics, so that you get the best vegetative yield and quality possible for that species. Forage oats are bred for leafiness and often grow longer in the vegetative state than typical grain oats. Leaves are wide, and the plant grows taller before heading. There’s a higher leaf to stem ratio, which means that more of the plant is made up of leaf biomass - of higher nutritional value and containing more digestible fiber than the stem. Leaf to stem ratio can be gauged in terms of leaf width, number of leaves per stem, and distance between leaves on the stem.

The cheapest option for oats is feed grade/bin run oats, which are unlikely to be forage oats, so yield and quality are a gamble. There is little in the way of quality control, creating risks of germination and weed seed content. They are also not named varieties, which eliminates your ability to analyze variety performance on your farm in an attempt to select a long term, dependable forage system that provides you with the highest overall yield and quality.

KING’S 2018 SPRING OAT TRIAL

(Sorted by yeild)

Varieties	Days to Harvest	DMYield Tons/A	Tons @ 65%	Plant Height “	Feekes @ Sample	% Crude Protein	% aNDFom	% Lignin	% Sugar WSC	% NDFd (30hr)	% NDFd 240hr	% uNDF240	% TTNDFD	% NDFd KD
CDC Haymaker	56	3.3	9.3	37.7	9.3	11.7	50.34	3.31	11.59	65.25	80.19	10.51	59.54	7.13
Niagara	56	3.0	8.7	40.7	10.1	12.2	53.76	4.78	10.27	57.05	72.03	15.85	53.18	7.04
Everleaf 126	56	2.6	7.5	31.0	8.5	11.6	48.56	2.69	14.48	69.11	81.81	9.36	62.46	7.61
Canmore	49	2.5	7.3	35.0	9.0	13.7	47.19	3.06	14.60	68.69	81.19	9.47	64.35	8.39
Reeves	43	1.6	4.4	29.0	9.0	16.2	42.70	2.43	8.89	69.07	81.94	8.22	58.58	6.57

GRAZING OATS

As long as they are sufficiently mature, oats can withstand high grazing pressure and produce abundant forage early in the season. Start grazing when plants are 8-10 inches tall, after roots have had a chance to become well-developed, and take about half the growth. Once the weather becomes warm enough, plants can grow quite rapidly, and you want to graze early and hard enough to maintain them in the leafy, vegetative state. This also helps them form tiller growth. For quickest recovery, only graze down to the height of the lowest stem node, about 5-6 inches above ground level.

Avoid hard grazing, which can remove the growing points and delay regrowth. Adjust animal numbers to keep the crop at the maximum quality level - boot stage or a little lower in maturity. Don’t worry if a few plants head out. Avoid grazing in wet conditions, since the crown and root will be more vulnerable to damage, also hampering regrowth.

Rotational grazing between two or more paddocks is recommended, since it allows the crop to regrow between grazings and there is less loss to trampling. (Number of paddocks will depend on stocking rate.) Depending on conditions, you may get several grazings. Strip grazing also works well, increasing crop utilization and decreasing selection and trampling losses.

Note: Everleaf is the best oat variety for multiple grazings after a spring seeding.

FORAGE VS. GRAIN OATS

Forage oats are also bred for softer stems with less lignin, and have to be very disease resistant to fight common oat diseases that can destroy tissue and lead to lower quality. Grain oats have stiffer stems to support a heavier grain-filled panicle, and are often shorter to resist lodging as they become top-heavy with grain, especially under high-yielding, highly irrigated conditions. Breeding considerations for grain oats can be quite different, since the focus is on producing a high-protein, high-test weight grain, rather than a high volume of quality vegetative growth.

King’s primary grain oat is, Badger Oats. In the 2013 test plots, it was consistently the earliest-heading oat (approximately 47-50 days after planting, while most other oats took 55 to 60 days to reach boot stage), and slightly lower dry matter yields than other oats (Ranging from 1.1 to 2.5 tons per acre). It was bred to be a grain oat, so it produces high test weight grain in a shorter period of time. Quick heading is important when grain production is the goal, but later heading is usually ideal when you want to maximize forage growth.

In King’s 2013 data, Badger Oats had the shortest average height, at 30 inches, while the other oats ranged from 31 to 37 inches. Badger Oats averaged 3 leaves per stem, among the lowest in leafiness, while Everleaf Oats, our leafiest, latest heading variety, averaged 4.5 with an average leaf width of .64 inches.

VARIETIES

CANMORE OATS

Tall growing, medium maturing oat with very good standability. Its grain yield would be competitive in cooler climates. It is an excellent straw producer along with a high forage yeilder.

CDC HAYMAKER OATS

A strong yielder, CDC Haymaker makes a tall, dense, and leafy stand. It also has a large grain head with plump kernels. Leaves are both exceptionally wide and long. Test weight is lighter than most grain varieties, and closer to many forage-bred varieties. Crown rust resistant.

EVERLEAF OATS

Everleaf 126 is a true spring oat with dark green foliage, an erect growth habit and very good standability. Everleaf 126 has leaves that actually extend above the canopy at heading. It is a delayed heading oat and much of its forage mass and quality come from an extended maturity. Since the plant is naturally vegetative for a longer period, biomass accumulation is excellent. Everleaf 126 has a compact panicle that offers an attractive product when baled. Height is medium to tall. Under good moisture and fertility heads emerge at 48 to 52 inches.

NIAGRA OATS

Niagara is a medium maturity Canadian forage oat with improved rust resitance. At boot stage, Niagara is high in crude protein and in percent digestible fiber

REEVES OATS

A medium maturity, high yielding oat variety. This is a medium-tall South Dakota bred oat. For forage, it is best suited for late summer to early fall seeding, as it gives fast fall vegetative growth.