

Pasture Interseeding <http://www.greencoverseed.com/>

- 1. White clover 50 POUNDS** is a very persistent, perennial legume with a sod forming canopy generally 8-12" in height.
Excellent stand persistence is achieved through reliable reseeding as well as through the spread of stolons. Though its forage quality is excellent there's a moderate-high bloat risk associated with white clover forage. This species can tolerate a lower pH better than red clover and alfalfa.
Well suited for wet bottom soils, white clovers struggle to produce growth in hot, dry environments due to its shallow root system.
White clover displays excellent winter hardiness and shade tolerance.
White clover can be easily frost seeded into pastures from November-March. It's suggested to spread the seed during the morning while the frost is still present and sow the seed early enough in the year to insure a couple freeze-thaw cycles. If over seeding into a grass sod apply 2-3 lbs/A and establishment success will be improved.
- 2. Cowpea 50 POUNDS** is known to be the most productive warm season, annual legume in the country. It's an excellent addition to any warm season mixture and is a great protein source in pasture. Known as the most heat-adapted legume with excellent drought tolerance, which can largely be attributed to its stout tap root. Cowpea roots have been documented at penetrating over 8 ft. into the soil profile, which is far superior to soybean roots. Cowpeas attract beneficial insects even without flowering because they excrete extra-floral nectar through small pores in the stems and leaves. Cowpeas are known to generally perform better in acidic soils than alfalfa and clover species. N production is so pronounced, that it's one of few legumes that will leave the soil with a positive N credit.
Cowpeas large seed size can cause broadcast seeding applications to be ineffective. If broadcast seeding be sure to incorporate or seed into soybeans where leaf drop can mulch in the seed.
A well-drained sandy loam or sandy soil with a pH ranging from 5.5-6.5 is desired.
Fertility in the field should at least have soil tests with 27 lbs/A of P and 40 lbs/A of K.
Planting Cowpeas should be treated much like soybeans when considering the optimum time for planting, which will commonly be around May to mid-June. Rapid germination will occur when the soil temperatures are sustained at least a minimum of 65 F. Be sure to plant after the last threat of frost has passed into moist soil. The optimum seeding depth is recommended to be 1- 1 1/2". A monoculture stand planted in 30" row spacing will have between 4-8 seeds per ft. Planting in mid to late summer will allow for the plant to stay in the vegetative growth stage. Best germination results will be obtained by incorporating the seed into the soil profile. If grazing, best results will be obtained when the seed is planted into 15" rows for less or broadcasted with some kind of shallow incorporation.
- 3. Hairy vetch** is one of the most winter hardy legumes. **50 POUNDS**
Hairy Vetch is known to grow in a wide array of soil types but is best adapted to a loam or sandy loam soil. This species tolerates a lower pH and poorly drained soils better than most legumes. Compacted soils will hamper plant establishment and growth. This cool-season legume doesn't tolerate heat or flooding very well. Hairy vetch can be interseeded into an established row crop with great results due to its high shade tolerance. A high drought tolerance, allows hairy vetch to out yield other vetch species during drought years. Hairy vetch is normally drilled or broadcasted in the fall. Many producers broadcast hairy vetch into soybeans at leaf yellowing or corn when the canopy allows 50% of the sunlight to reach the ground. A successful broadcast seeding, is directly correlated to the amount of soil moisture or rain fall that is present after the application. Seeding should occur 30 to 45 days before a killing frost to get a good establishment. Emergence will occur about 14 days after planting. A nurse crop is suggested for establishment because hairy vetch produces low amounts of fall growth. Hairy vetch may be sown in early spring but will produce far less biomass compared to a fall sown stand.
- 4. Red clover (I think I have 50# here.)** is less invasive than white clover because of its shorter life span and the lack of rhizome or stolon rooting structures. Its deep taproot can extend up to 3ft into the soil profile and finer rooting structure in the top 5" can really aid in breaking up compacted soils. Red clover flowers are known to attract many pollinator and beneficial insect species.
Bloat is also a real concern for ruminant animals and should be closely monitored.

Red clover grows best in hot, temperate climates where moisture is sufficient. With the ability to grow on a wide array of soils types, it performs best on soils that are conducive for corn production, especially in cooler environments. Though well drained soils are preferred, red clover is more tolerant of wet, acidic soils than alfalfa.

Best known for being one of the most cold hardy legumes, red clover has been documented to survive through temperatures as low as -22 F. Winter survival can be improved if the species isn't mowed or grazed up to six weeks before first frost.

Red clover can be easily established by broadcast or interseeding into many crop rotations

Red clover can be easily interseeded or frost seeded into small grain crops as well. Emergence occurs in just 7 days which is faster than most other legumes but the seedling growth is still slow. Plant growth occurs between 44-104 F, with the optimum growth temperature between 68-77 F.

5. **BMR Brown (I did not buy any yet.)** is a rapid growing and very versatile, summer annual species with a very large, penetrating root system.

During drought conditions sorghum-sudangrass has the greatest potential to be utilized for an emergency forage crop. Mowing or grazing only encourages more tillering and stimulates root growth, which aids in getting more carbon into the soil profile therefore build soil structure and OM.

The dense rooting system associated with this species, can really aid in breaking up and penetrating compacted soils.

If you are grazing, find cultivars that are known to produce low amounts of dhurrin because this is the chemical that is responsible for prussic acid. High amounts of prussic acid can be lethal to livestock and is a major concern when the forage is small, stressed or during the first hard frost event. Don't allow the animals to graze the forage until the forage has reached 18-36" in height. For the first hard frost event, no grazing or forage harvesting should occur until a week after the exposure because this releases a large flush of prussic acid and it will need a short time to dissipate from the forage. During drought conditions prussic acid could be a concern but you really need to watch for nitrate toxicity in the forage.

low fertility can support this species but with reduced results. This species excellent drought and heat tolerance can be partially attributed to the fact that it can go dormant until the weather conditions become more favorable for further growth.

Broadcast applications results can greatly vary but incorporated to an inch of depth can greatly increase the effectiveness. Emergence occurs 10 days after planting and growth will induce rapidly

6. **Cereal rye (Can get at CL)** is one of the most versatile and commonly used cover crops in the country. Rye is the most winter hardy of all cereal crops in various growing conditions

This species remarkable spring growth, has the potential to produce a lot of residue or forage. The residue is a great harbor for beneficial insects, most notably lady bugs

Also, the residue gives off allelopathic chemicals up to a month after termination, which aids in preventing small seeded weeds and grasses from germinating.

Cereal Rye has an excellent fibrous root system that alleviates surface compaction. Rye can be successful planted later than almost any other cover crop due to its low germination and growth temperature requirements. Cereal rye is known for being the best cereal crop at retaining residual N. It's typical for a fall planted cereal rye crop to scavenge on average 25 to 50 lbs of N, with cases scavenging in excess of 100 lbs of N. The vigorous spring growth has successful weed suppression through competition and allelopathic chemicals.. Rye will out yield any other cereal crops when planted in droughty, infertile, or sandy soils. the residue excretes allelopathic chemicals during decomposition which maybe effect your next crop if not managed correctly. These chemicals can be excreted in the soil for up to a month after termination and are more effective at suppressing the germination of small seeded and grass species

Rye can be planted later than most other species because it only requires 34F to germinate and 38F for vegetative growth. This species prefers a well drained, sandy loam soil but will tolerate a heavy, wet or acidic soil. Rye is the most winter hardy cereal crop and will grow best in a cool, temperate climate. Cereal ryes extreme cold tolerance is displayed through the plants ability to survive exposure to -31F.

7. **Oats (I have at CL)** grow best in cool, moist environments, with soils that are moderately fertile.

This species has the potential to be grown on a wide range of soils and can tolerate a wider pH range than wheat or barley. Oats can't tolerate cold or waterlogged soils. wait at least two weeks after termination before planting a cash crop after oats to minimize any negative effects from allelopathic chemicals that are excreted during decomposition.

If planting as a nurse crop sow 1-2 bushel per acre. If a thick soil protecting cover is desired then sow 3-4 bushel per acre. A spring planting of oats will produce significantly more biomass, up to 8,000 lbs/A

8. **Radishes 20 POUNDS** claim to fame was achieved through its renowned taproot, rapid fall growth and its ability to scavenge residual nutrients. Frost killed below 25F
Rapid fall growth in short windows, allows radishes to fit perfectly into a traditional corn and soybean rotation.
9. **Rape is a 50 POUNDS** versatile, cool season winter or spring annual brassica, that can be utilized in a wide array of mixtures. This brassica can provide a great emergency forage source in just 8-10 weeks which can be grazed multiple times. Use rape in spring mixtures where a brassica is desired because it will be the slowest species in the brassica family to flower and produce seed. This will allow your mixture to grow longer before termination is required. Rapes yellow flowers attract many beneficial insects, such as the hoverflies which larvae are known to prey on aphids.
Rape's rapid forage growth produces quality pasture equivalent to alfalfa, with a crude protein value around 16-17%
Rapes seed cost is by far the cheapest of all the brassica species, generally less than \$1/lb. Rape has an excellent, deep penetrating tap-root with a dense fibrous root mass surrounding the tuber.
Rape isn't known to aid in boosting mycorrhizal populations
Rape is easy to establish when soil temperatures range from 45-85F and emergence will occur within 4-10 days. Broadcast seeding rape is very effective as long as moisture is available.
10. **Mustard 10 POUNDS** is a versatile annual brassica, that can produce rapid growth up to 3-5 ft tall. This species produces a thick tap root that penetrates 1-3 ft into the soil profile, with a thick fibrous root system at the surface similar to that of cereal species. Mustards yellow flowers will bloom within 6 weeks after emergence, which attracts many beneficial and pollinator insects, such as the honeybees, lygus bugs, ladybugs and hoverflies.
Mustard can tolerate low fertility soils ranging from well drained to moderately well drained.
Mustards drought tolerance sets it apart from other brassicas in dry times.
Mustard should be planted when soil temperatures range from 45-85F and emergence will occur within 5-7 days. This species thrives in cooler conditions and a good establishment is easy to achieve when sufficient moisture is available.
11. **Buckwheat (Did not get any.)** is vigorous growth habits make it an exceptional choice for a quick establishing crop with superior weed suppression. This is your crop if you desire a crop that flowers quickly and for extended periods of time. Flowering can occur in the first three weeks of growth and continue on for ten weeks. These flowers attract a large array of beneficial and pollinator insects.
Buckwheat is known to perform better in low fertility soils than cereal crops. This species has historically been planted on newly cleared or over farmed lands to rejuvenate the soil. The first presence of frost will terminate the crop. Buckwheat is not a crop known to handle a drought very well, due to its shallow root base.
12. **Millet (5#)** is a C4 plant which means it has good water efficiency and utilizes high temperature and is therefore a summer crop. A C4 plant uses a different enzyme in photosynthesis to C3 plants and this is why it improves water efficiency.
13. **Grazing Corn, BMR (5#)**
14. **Chickling Vetch, (5#).**
15. **Sainfoin (5#).**
16. **Chickory, Grouse (5#).**
17. **Alfalfa, (50#)**