Grass
Ryegrass, Annual
Lolium multiflorum

COVER CROP DESCRIPTION

Establishes well in tough conditions. Tolerates wet soils better than small grains. Not good in heat or drought. Winter-hardiness can vary – select cultivar accordingly. Dense fibrous root system, top soil conditioner, good weed fighter and N scavenger, top-quality forage. Needs N fertility for high biomass. One of the best cover crop species for interseeding due to ease of establishment under droughty conditions, shade tolerance, and short stature. Annual ryegrass is a key weed in small grains. Do not allow to set seed. Can be hard to kill with herbicides and other methods; successful termination dependent on crop growth stage and application timing. Blends of annual ryegrass that mature at different times will make termination more difficult. Mixes well with crimson clover. Shorter than small grains with a lower C:N ratio.

Ryegrass, Annual - Ackroyd [2020]   Ryegrass, Annual - Ackroyd [2020]

GOALS
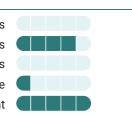
Growing Window	Short		Penetrates Plow Pan	▣▣▣▢▢
Nitrogen Scavenging	▣▣▣▢		Reduces Surface Compaction	▣▣▣▣
Lasting Residue	▣▢▢▢		Improve Soil Organic Matter	▣▣▢▢
Prevent Fall Soil Erosion	▣▣▣▣		Increase Soil Aggregation	▣▣▣▣
Prevent Spring Soil Erosion	▣▢▢▢		Good Grazing	▣▣▣▢
Forage Harvest Value	▣▣▣▢		Pollinator Food	▣▢▢▢▢
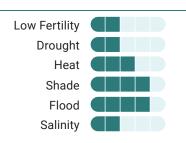
WEEDS

Residue Suppresses Summer Annual Weeds	▢▢▢▢▢
Outcompetes Summer Annual Weeds	▣▣▣▣▢
Suppresses Winter Annual Weeds	▢▢▢▢▢
Persistence	▣▢▢▢▢
Volunteer Establishment	▣▣▣▣▣

ENVIRONMENTAL TOLERANCES

Low Fertility	▣▣▢▢
Drought	▣▣▢▢
Heat	▣▣▣▢
Shade	▣▣▣▣
Flood	▣▣▣▣
Salinity	▣▣▢▢

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Growth Traits

Duration	Annual
Zone Use	Common
Shape And Orientation	Erect
Dry Matter (Lbs/A/Yr)	1000 - 9000
Soil Texture	Fine
	Medium
Soil pH	5.5 - 7.5
Soil Moisture Use	
Hessian Fly Free Date?	No
Ease Of Establishment	
Establishes Quickly	
Early Spring Growth	
Flowering Trigger	Long Day
Root Depth	Deep

Soil Drainage

- **Very Poorly Drained** ●
- **Poorly Drained** ●
- **Somewhat Poorly Drained** ●
- **Moderately Well Drained** ●
- **Well Drained** ●
- Excessively Drained
- **Saturated Muck** ●
- **Well Drained Muck** ●

Planting

Seeds Per Lb	
Seed Price Per Lb	$ $ $
Base Seeding Rate (Lbs/A)	15 - 30
Drilled Depth	0.25" - 0.5"
Can Aerial Seed?	No
Can Frost Seed?	No
Min Germination Temp (°F)	40

Termination

Tillage At Vegetative	
Tillage At Flowering	
Freezing At Vegetative	
Freezing At Flowering	
Chemical At Vegetative	
Chemical At Flowering	
Mow At Flowering	
Roller-Crimp At Flowering	

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Planting and Growth Windows

🔵 Frost Seeding	N/A
🟢 Reliable Establishment	04/15 - 09/15
🟡 Temperature/Moisture Risk	N/A
🟢 Active Growth Period	Summer
	Spring
	Fall
Winter Survival	xpectedSeldor
Can Interseed	N/A

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Extended Comments

Weeds: If mowing, leave 3-4" to ensure regrowth; Must be killed before it joints or after heading

Forage and Grazing: Breeding efforts in Europe to make Italian ryegrass more winterhardy because it is FANTASTIC forage. This makes it difficult to manage as a cover crop if the farm has no livestock to feed it to.

Environmental Tolerances: Winter survival is highly dependent on cultivar and overwintering is likely to be sparse in zone 4.

Goals: Italian ryegrass is a biennial; needs vernalization to set seed and reliably winter kills in some areas, hence the nickname "annual ryegrass." There are true annual ryegrasses: these are called Westerwolds. They do not have a vernalization requirement to set seed, so management is needed to prevent volunteers. Cultivar matters hugely when using ryegrass as a cover crop because it affects the likelihood of winterkill and how challenging it will be to manage in rotation.

Taxonomy: Scientific name quandry! Lolium multiflorum deprecated: https://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Festuca+perennis; Italian ryegrass (closely related) does not need vernalization to flower so choose annual ryegrass instead if weediness is a concern.

Nematodes: Host for root-knot and sting nematode

Termination: Herbicide resistance has been documented in annual ryegrass, see Tech Note under Resources section. If using tillage, multiple passes may be necessary.

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References & Resources

Cover Crops and Green Manures, University of Vermont Extension
2016 Cover Crop Mix in Corn Silage Trial, University of Vermont Extension
2015 Cover Crop Mix in Corn Silage Trial, University of Vermont Extension
2014 Summer Cover Crop Mix, University of Vermont Extension
Under Cover – Integrating Cover Crops into Silage Corn Systems, University of Vermont Extension
Pasture Production of Selected Forage Species, University of New Hampshire Cooperative Extension
Cover Cropping for Success, University of Maine Cooperative Extension
Cover Crops for Home Gardens, University of Maine Cooperative Extension
Using Green Manures, Maine Organic Farmers and Gardeners Association
Selected Green Manures and Cover Crops for Maine, University of Maine
Spring Management of Overwintering Cover Crops – Don't Wait!, Cornell University Cooperative Extension