Rye

Secale serale

Rye is a cold-tolerant grain that germinates in cool soil (34-40˚F),[1] making it a major fall-planted cover crop in the Northeast for winter erosion control. The crop prefers well-drained soils but will tolerate heavy clays and acid soils. Rye has a well-developed fibrous root system that reduces leaching of soil nitrates. The top growth provides soil cover and suppresses weeds; however, it can be difficult to control in the spring.

Land preparation	Prepare a seedbed free of clods and weeds. If tillage is impossible, rye can be broadcast on moist, untilled ground. Additional fertilizer is usually not needed, especially when following vegetables.
Seeding rate	Date / Drill / Broadcast 9/15 — 60 — 85 lb/ac. 9/22 — 100 — 140 10/1 — 140 — 200 10/15 — 180 — 250 Drill 1 to 1½ inches deep. After broadcasting, cover 1 inch.[2] Rye is often mixed with legumes as a nurse crop. In fall, use 70 lb/ac. rye with 20-25 lb/ac. hairy vetch.[1] In the spring, use 60 lb/ac. rye with 15 lb/ac. medium red clover.[3]
Seeding date	September 15 - October 10 for winter cover. October 15 for spring cover. April 15 as a nurse crop for clover.
Seed sources	Local seed dealers, Seedway, AgriCulver, local farmers (if the seed is weed-free).
Maintenance	None .
Control	Terminate early in spring for vegetable production, ideally at 6 to 8 inches height. Wet, warm spring weather can cause quick growth and make incorporation difficult and suppress the crops that follow. Terminate with herbicide (e.g. 1 lb/ac. glyphosate)[4] when the rye is 6-8 inches tall,[5] and allow to decompose for 3-4 weeks. Without herbicide, plow down early. Plants may regrow if crowns are large. A later mechanical termination is possible by mowing after all the tillers are to the boot stage (typically early May). The roller-crimper method has not been an effective termination method in New York.
Tips	Some crops are suppressed following rye, from allelopathy[1], nutrient tie-up and other effects. Wait at least two weeks after incorporation before planting vegetables. Wheat may be preferred as a cover crop to reduce this risk.

Björkman, T. and J.W. Shail. 2008. Cornell cover crop guide for rye. Cornell University. 2pp. Ver. 1.080324

References
[1] Soil Health Series, Rodale Institute Research Center, Fact Sheet # 12, 1993.
[2] Clark, A. 2007. Managing Cover Crops Profitably, 3rd ed., Sustainable Agriculture Network. p.100.
[3] The New Farm's Cover Crop Guide, Rodale Research Center, p.6, 1988.
[4] Masiunas, J.B., L.A. Weston, S.C. Weller. 1995. The impact of rye cover crops on weed populations in a tomato cropping system, Weed Science 43:318-323
[5] Thorup Kristensen, K., D.B. Dresbøll. 2010. Incorporation time of nitrogen catch crops influences the N effect for the succeeding crop. Soil Use and Management 26: 27–35

Disclaimer

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For more information

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