

Table 2. Characteristics, ability to provide various services, and recommended planting date windows for legume winter cover crops commonly used in temperate cropping systems.

Species	Optimum Termination Timing	Growth Form	Nitrogen retention	Nitrogen supply	Erosion Control	Alleviate Subsoil Compaction	Weed Suppression	Resources for Beneficial Insects	Habitat for Beneficial Insects	Forage Production	Planting date window, weeks before first killing frost ⁴	Potential Drawbacks
Red Clover (<i>Trifolium pratense</i>)	LS	SD	●	●	●	●	●/● ²	●	●	●	8 to 12 or frost-seeded into small grain	
Austrian Winter Pea (<i>Pisum sativum subsp. arvense</i>)	LS	V	●	●	●	●	●	●	●	●	2 to 10	
Crimson Clover (<i>Trifolium incarnatum</i>)	MS	SD	●	●	●	●	●	●	●	●	3 to 10	
Hairy Vetch (<i>Vicia villosa</i>)	LS	V	●	●	●	●	●	●	●	●	2 to 10	Hard seed can cause delayed germination in subsequent cash crops, becoming a weed
Fava bean (<i>Vicia faba</i>)	WK-25°	TO	●	● ¹	●	●	●	●	●	●	8 to 10	Can build large populations of potato leafhopper, <i>Empoasca fabae</i> .
Sunnhemp (<i>Crotalaria juncea</i>)	WK-32°	TO	●	● ¹	●	●	●	●	●	●/● ³	10 to 14	
Soybean (<i>Glycine max</i>)	WK-32°	SD	●	● ¹	●	●	●	●	●	●	10 to 14	Can build populations of cash crop soybean pests

ES= Early Spring; MS= Mid Spring; LS= Late Spring; WK-32°= Winter-kills after light frosts; WK-25°=Winter-kills after hard freezes; SD = Short, dense; TO= Tall, open; V= Vining; ● = Excellent ability; ● = Moderate ability; ● = Limited to no ability.

Notes

¹N released rapidly following winter kill of these species is subject to leaching losses. ²When frost-seeded into a small grain in late-winter, red clover provides excellent weed suppression after the small grain is harvested. When seeded in the summer, red clover is slow to establish and prone to weed invasions. ³Some varieties of sunnhemp have high levels of alkaloids, which can be poisonous to livestock. The variety ‘Tropic Sun’ was bred to contain low alkaloid levels and is palatable to livestock. For optimum forage quality, sunnhemp should be harvested within 30 days of planting, otherwise crude protein levels drop. ⁴Planting date recommendations from Cover Crop Solutions, LLC when available and personal experience otherwise.