

# Appendix to Practice Guide for Cover Crop (340)

Table 1: Cover Crop Plant Species Suitability Ratings to support practice purposes					NRCS Pennsylvania		PA 340			
PLANT SPECIES	PRACTICE PURPOSES					OTHER CONSIDERATIONS				
	Cool-Season Growth*	Reduce erosion	Increase soil health and organic matter	Utilize (scavenge) excess nutrients	Suppress weeds/pests	Minimize compaction		N fixation	Host for Arbuscular Mycorrhizal Fungi	Beneficial/ Pollinator
Subsoil						Surface soil				
Winter Rye*	5	5	5	5	5	3	5	N	Y	N
Winter Barley*	5	4	4	4	4	3	5	N	Y	N
Winter Wheat*	4	4	4	4	4	3	5	N	Y	N
Winter Triticale*	5	5	5	5	5	3	5	N	Y	N
Oats*	4	4	4	4	5	1	5	N	Y	N
Annual Ryegrass	4	4	4	4	4	3	5	N	Y	N
<b>Warm-Season Growth*</b>										
Sorghum Sudangrass*	5	5	5	5	5	5	3	N	Y	N
Pearl Millet*	5	5	3	5	5	1	5	N	Y	N
Japanese Millet*	5	5	5	5	5	1	3	N	Y	N
Teff*	5	5	5	5	5	1	3	N	Y	N
Buckwheat*	3	3	3	5	5	1	5	N	Y	Y
Sunflower*	3	3	5	3	3	3	1	N	Y	Y
<b>Legumes</b>										
Cowpea	5	4	2	5	5	3	2	Y	Y	Y
Sunn Hemp	3	5	3	5	5	5	3	Y	Y	Y
Berseem Clover	4	4	4	4	4	0	5	Y	Y	Y
Red Clover	3	4	4	4	4	5	3	Y	Y	Y
Sweetclover	4	5	2	4	4	5	5	Y	Y	Y
Subterranean Clover	4	4	2	5	5	0	3	Y	Y	Y
Crimson Clover	4	4	3	4	4	0	3	Y	Y	Y
Field/Austrian Winter Pea	4	3	2	4	4	1	5	Y	Y	Y
Hairy Vetch	3	4	2	3	3	3	5	Y	Y	Y
<b>Brassicas (Cruciferae)</b>										
Forage Radish	4	4	5	5	5	5	3	N	N	N
Rapeseed/Canola	5	3	4	4	4	3	3	N	N	Y
Mustards	4	3	4	4	4	1	5	N	N	Y
Turnip	1	4	3	4	4	5	5	N	N	N
*When managing these plants as cover crops, harvesting for grain or seed is not allowed under the conservation practice standard 340 to remain eligible for crop insurance. If species are suitable for livestock feed, cover crops may be harvested as forage for hay or grazing.										
1=Poor; 2=Fair; 3=Good; 4=Very Good; 5=Excellent; 0 = no information										

Table 2: Cover Crop Characteristics for determining compatibility with cropping system						NRCS Pennsylvania						PA 340			
Plant Species	Life cycle <sup>1</sup>	Seeding Rate <sup>2</sup> lbs./ac	Hardy thru (PHZ) zone <sup>1</sup>	Shade Tolerance for Inter-seeding	Seeding Depth Inches	Optimum Season Seeding Reliability <sup>3</sup>						Latest seeding dates (fall) For Winter Erosion Control			
						Spring	Early Summer	Summer	Early Fall	Fal I	Late Fall	Zone 1	Zone 2	Zone 3	
<b>Cool-Season Growth</b>															
Winter Rye ( <i>Secale cereale</i> )	WA	112	3	Y	¾ - 2				✓	✓+	✓	10/10	10/15	10/25	
Winter Barley ( <i>Hordeum vulgare</i> )	WA	120	6	Y	¾ - 2	✓+			✓			NA	9/25	10/1	
Winter Wheat ( <i>Triticum aestivum</i> )	WA	120	3	Y	½ - 1 ½	✓+			✓+	✓+		10/1	10/5	10/15	
Winter Triticale (x <i>Triticosecale</i> )	WA	110	3	N	½ - 1 ½				✓	✓+		10/5	10/10	10/20	
Oats ( <i>Avena sativa</i> )	SA	100	8	N	½ - 1 ½	✓+			✓+	✓		9/1	9/10	9/15	
Annual Ryegrass ( <i>Lolium multiflorum</i> )	WA	20	6	Y	1/8 - ½	✓+	✓	✓-	✓+			8/15	9/1	9/15	
<b>Warm-Season Growth</b>															
Sorghum-Sudangrass Hybrids ( <i>Sorghum bicolor</i> x <i>S. 2udanese</i> )	SA	35	NFT	Y	½ - 1 ½		✓+	✓+				NA	NA	NA	
Pearl Millet ( <i>Pennisetum Glaucum</i> )	SA	15	NFT	N	½ - ¾		✓	✓				NA	NA	NA	
Japanese Millet ( <i>Echinochloa frumentacea</i> )	SA	20	NFT	N	½ - 1		✓	✓				NA	NA	NA	
Teff ( <i>Eragrostis tef</i> )	SA	8	NFT	N	1/8 - ¼		✓	✓				NA	NA	NA	
Buckwheat ( <i>Fagopyrum esculentum</i> )	SA	50	NFT	N	½ - 1 ½		✓+	✓+				NA	NA	NA	
Sunflower ( <i>Helianthus annuus</i> )	SA	5	NFT	N	1/8 - ¼		✓+	✓+				NA	NA	NA	
<b>Legumes</b>															
Cowpea ( <i>Vigna unguiculata</i> )	SA	40	NFT	N	1 - 1 ½		✓	✓+				NA	NA	NA	
Sunn Hemp ( <i>Crotalaria juncea</i> )	SA	10	NFT	N	½ - 1 ½		✓	✓+				NA	NA	NA	
Berseem Clover ( <i>Trifolium alexandrinum</i> )	SA	15	NFT	N	¼ - ½	✓+	✓+	✓	✓-			NA	NA	NA	
Red Clover ( <i>Trifolium pretense</i> )	SLP	10	4	N	¼ - ½	✓+		✓	✓-			NA	NA	NA	
Yellow Sweet Clover ( <i>Melilotus officinalis</i> )	B	10	4	N	¼ - 1	✓			✓			NA	NA	NA	
Subterranean Clover ( <i>Trifolium subterraneum</i> )	SA	12	8	N	¼ - ½	✓	✓	✓				NA	NA	NA	
Crimson Clover ( <i>Trifolium incarnatum</i> )	WA/SA	15	6	Y	¼ - ½	✓+	✓+	✓	✓+			NA	9/1	9/15	
Austrian Winter Pea ( <i>Pisum sativum</i> )	SA/WA	50	7	N	1 ½ - 2	✓+	✓		✓+			NA	8/25	8/30	
Hairy Vetch ( <i>Vicia villosa</i> )	WA	20	4	Y	½ - 1 ½				✓+	✓		8/15	9/1	9/15	
<b>Brassicas (Cruciferae)</b>															
Forage Radish ( <i>Raphanus sativus</i> )	SA	10	8	Y	¼ - ½	✓+	✓		✓+			9/1	9/7	9/15	
Rapeseed/Canola ( <i>Brassica napus</i> )	WA/SA	10	8	Y	¼ - ¾	✓+	✓		✓+			9/1	9/7	9/15	
Mustards ( <i>Brassica juncea</i> )	SA	10	8	N	¼ - ¾	✓+	✓		✓+			9/1	9/7	9/15	
Turnip ( <i>Brassica rapa</i> )	SA	10	8	N	¼ - ¾	✓+	✓		✓+			9/1	9/7	9/15	

1. A = annual; WA = winter annual; SA = summer annual; B = biennial; SLP = short-lived perennial; NFT = no frost tolerance

2. Drilled seeding rate; for broadcast seeding or for seeding past optimum date, increase 25 to 50 percent.

3. Optimum Season Seeding Reliability: Above Average (✓+); Average (✓); Below Average/Unknown (✓-); Blank = Not Recommended