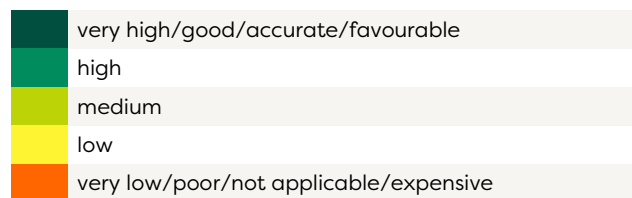


Important cover crops and their main characteristics



	English	Scientific Name	Juvenile development	Biomass production	Nitrogen fixation	High C:N ratio	Feed utilisation	Winter hardiness	Drought tolerance	Late sowing tolerance	Undersown tolerance	Average sowing rate kg pure seed	Price in EUR /kg *	Additional Notes
Legumes	Berseem clover	<i>Trifolium alexandrinum</i>	Green	Green	Green	Yellow	Green	Green	Orange	Yellow	Green	30	4,10	Warmth and moisture for rapid juvenile development
	Bird's foot clover	<i>Ornithopus sativus</i>	Yellow	Green	Green	Yellow	Green	Green	Green	Green	Green	35	4,30	Suitable on sandy soils
	Black medic	<i>Medicago lupulina</i>	Yellow	Yellow	Green	Yellow	Green	Green	Green	Green	Green	15	10,30	
	Common vetch	<i>Vicia sativa</i>	Yellow	Green	Green	Orange	Green	Green	Yellow	Green	Orange	120	2,20	avoid seed dispersal
	Crimson clover	<i>Trifolium incarnatus</i>	Yellow	Green	Green	Yellow	Green	Green	Green	Green	Green	25	4,00	
	Faba bean	<i>Vicia faba</i>	Green	Green	Green	Yellow	Green	Yellow	Orange	Yellow	Orange	200	1,40	Supporting crop
	Forage pea	<i>Pisum sativum</i>	Green	Green	Green	Yellow	Green	Green	Yellow	Yellow	Orange	120	1,55	Optimum pH: 6.2-7, highly susceptible to lodging
	Grass pea	<i>Lathyrus sativus</i>	Green	Green	Green	Yellow	Green	Green	Green	Green	Orange	120	2,90	Strong root development
	Hairy vetch	<i>Vicia villosa</i>	Yellow	Green	Green	Orange	Green	Green	Yellow	Green	Orange	60	3,40	Avoid seed dispersal, seed dormancy, heat tolerant, slow establishment
	Hungarian vetch	<i>Vicia pannonica</i>	Yellow	Green	Green	Orange	Green	Green	Green	Green	Orange	60	2,70	pH values above 6 favourable, avoid seed dispersal
	Lentil	<i>Lens culinaris/Lens nigricans/Vicia ervilia</i>	Orange	Green	Green	Yellow	Green	Green	Yellow	Yellow	Yellow	75	4,90	Suitable for shallow and stony soils
	Lupins (yellow, blue, white)	<i>Lupinus luteus, angustifolius, albus</i>	Green	Green	Green	Yellow	Green	Green	Green	Yellow	Orange	120	1,70	Low pH values, phosphorus mobilisation, reduced soil erosion, favourable for soil fertility
	Persian clover	<i>Trifolium resupindum</i>	Green	Green	Green	Orange	Green	Green	Green	Yellow	Green	15	6,50	Not on acidic soils
	Purple vetch	<i>Vicia bengalesis</i>	Yellow	Green	Green	Orange	Green	Green	Green	Yellow	Orange	35	n.a.	Heat tolerant, reduced soil erosion, heavy and wet soil tolerant, avoid seed dispersal
	Squarrose clover	<i>Trifolium squarrosum</i>	Green	Green	Green	Yellow	Green	Green	Green	Yellow	Green	30	2,70	Resistant to low temperatures, allelopathic plant - may limit the growth of other plants
Subterranean clover	<i>Trifolium subterraneum</i>	Yellow	Green	Green	Yellow	Green	Green	Green	Green	Green	15	6,90		
White clover	<i>Trifolium repens</i>	Yellow	Green	Green	Yellow	Green	Green	Green	Green	Green	12	11,70	Persistent after first year, can be invasive	
Poaceae	Black oat	<i>Avena strigosa</i>	Green	Green	Orange	Green	Green	Yellow	Green	Green	Yellow	110	2,60	All soil types, even with low pH values
	Proso millet/Foxtail millet	<i>Panicum milliaceum, Seteria italicum</i>	Orange	Green	Orange	Green	Yellow	Orange	Green	Yellow	Green	20	2,50	
	Sudan grass/Sorghum millet	<i>Sorghum sudanese Sorghum bicolor</i>	Yellow	Green	Orange	Green	Green	Orange	Green	Yellow	Green	25	3,50	Heat tolerant
	Winter rye	<i>Secale cereale</i>	Green	Green	Orange	Yellow	Green	Green	Green	Green	Orange	120	1,10	

	English	Scientific Name	Juvenile development	Biomass production	Nitrogen fixation	High C:N ratio	Feed utilisation	Winter hardiness	Drought tolerance	Late sowing tolerance	Undersown tolerance	Average sowing rate kg pure seed	Price in EUR /kg *	Additional Notes
Asteraceae	Marigold	<i>Tagetes</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	8	76,00	Combating <i>Pratylenchus</i> with good root penetration
	Niger	<i>Guizotia abyssinicum</i>	High	High	Very High	High	Very Low	High	Medium	Low	High	10	2,70	Seed should be free from clover dodder (<i>Cuscuta epithimum</i>), susceptible to <i>Rhizoctonia</i> and <i>Sclerotinia</i>
	Safflower	<i>Carthamus</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	24	11,00	Salt tolerant, pH values above 6 favourable
	Sunflower	<i>Helianthus</i>	High	High	Very High	High	Very Low	High	Medium	Low	High	12	3,50	High water demand, <i>Sclerotinia</i> propagator, stems must be chopped
Brassicaceae	Brown mustard	<i>Sinapis juncea</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	8	3,80	
	Camelina	<i>Camelina sativa</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	10	2,90	Prefers medium-heavy soils
	Forage radish	<i>Raphanus sativus</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	24	4,10	Nematode-resistant varieties available, avoid seed dispersal, reduces weed growth, quick nitrogen release
	Peppergras	<i>Lepidium sativum</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	8	7,10	Not in crop rotation with sugar beet and rapeseed
	Spring forage rapeseed/spring turnip rape	<i>Brassica napus, Brassica napa</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	15	2,80	
	White mustard	<i>Sinapis alba</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	8	2,60	Nematode-resistant varieties available
	Winter forage rapeseed / winter turnip rape	<i>Brassica napus, Brassica napa</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	12	2,60	
Other	Buckwheat	<i>Fagopyrum</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	60	1,80	Phosphorus mobilisation, avoid seed dispersal, used as phytosanitary plant
	Hemp	<i>Canabis</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	25	7,90	Be aware of THC levels
	Linseed	<i>Linum</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	50	4,10	Cultivation intervals of at least 10 years
	Mallow	<i>Malva</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	10	11,80	Avoid seed dispersal, seed dormancy
	Phacelia	<i>Phacelia tanacetifolia</i>	High	Medium	Very High	High	Very Low	High	Medium	Low	High	10	4,70	Not in crop rotation with potatoes, promotes corky ringspot



* Prices are researched and verified for German market Oct 2025, referenced with market association of Naturland farms (Hohenkammern). Prices refer to organic seeds, if available. <https://marktgesellschaft.de>

Source: Choosing and managing cover crops in organic agricultural systems, <https://itab.bio/recherche?search=Cahier%20Couverts>.

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Supported by:



This list containing common cover crops was compiled in the framework of the EUKI project "Improving C-balances on organic farms for the sequestration of atmospheric carbon". The project strengthens carbon sequestration in organic farming by setting up demonstration trials, establishing knowledge-sharing networks, and developing training programs. It directly engages farmers, advisors, and policymakers through workshops, field visits, and capacity-building activities to enhance soil carbon management practices.