**Supplementary Table**. A noncomprehensive summary of research on mechanical and chemical suppression of living mulches for temperate field and vegetable crops.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop species** | **Mulch species** | **Location** | **Mode of mulch suppressiona** | **Outcome** | **Source** |
| Barley, triticale | Kura clover | Alberta, Canada | Chemical  | Glyphosate (0.41 kg ai ha−1) reduced the kura clover proportion of silage, but interspecific competition remained strong. Suppressed clover still contributed to weed control.  | (Kosinski et al. 2011) |
| Barley, oat | White clover | United Kingdom | Chemical  | Broadcast paraquat (5.6 L ha−1) increased barley yield relative to a band of glyphosate (1.4 kg ai ha−1) in 1 yr. In a second year, this paraquat rate was superior to a lower rate (2.8 L ha−1) or a glyphosate band for both barley and oat. | (Williams and Hayes 1991) |
| Bean (snap) | Cereal rye | Ontario, Canada | Chemical | Very low rates of quizalofop-P-ethyl (up to 18 g ai ha−1) sometimes reduced rye vigor but did not prevent yield losses or enable consistent weed control. | (Buck 2018) |
| Bean (dry), pepper (bell) | Korean lespedeza [*Kummerowia stipulacea* (Maxim.) Makino]; teff, [*Eragrostis tef* (Zucc.) Trotter] | Kentucky, USA | Mechanical  | Teff sometimes grew better after conventional tillage than after strip tillage. Mowing two or three times did not suppress the living mulches, but did tend to suppress weeds. | (Hessler 2013) |
| Bean (Italian, green), beet (sugar), cabbage | Perennial ryegrass | Oregon, USA | Mechanical, chemical  | Herbicides (sethoxydim, fluazifop) were most effective when applied to vigorously growing grass. When chemical suppression was inadequate, narrower tilled strips resulted in lower yields. Cabbage and sugar beet suffered severe yield losses. | (Rinehold 1987) |
| Beet, cabbage | Oat, perennial ryegrass, rye | New York, USA | Chemical | Low herbicide rates did not successfully suppress living mulches, leading to unacceptable yield losses, but high rates killed them.  | (Hughes and Sweet 1979) |
| Beet (sugar) | Oilseed rape, rye  | Germany | Chemical  | When winter-hardy cover crops were strip-tilled, yield of a glyphosate-resistant crop was higher when suppression included preemergence glyphosate (1.08 kg ai ha−1) than with postemergence-only programs.  | (Petersen and Röver 2005) |
| Bok choy (*Brassica rapa* L.) | Perennial ryegrass | Oregon, USA | Mechanical, chemical | Fluazifop-P-butyl (0.17 kg ai ha−1) appeared to be a better management approach than mowing twice, but crop yield did not differ between these treatments. | (Wiles et al. 1989) |
| Broccoli | Annual ryegrass, black oat (*Avena strigosa* Schreb.), rye | Florida, USA | Mechanical  | Mowing the living mulches 3 and 7 wk after planting did not suppress them strongly enough to improve broccoli yield. | (Chase and Mbuya 2008) |
| Broccoli | Purslane (common, upright) | Connecticut, USA | Mechanical  | Common purslane promoted weed control and good broccoli yields if early-season weed control was supplemented with hand-hoeing or hand-weeding.  | (Ellis et al. 2000) |
| Cabbage (white) | Birdsfoot trefoil, red clover, salad burnet, winter rye | Denmark | Mechanical  | Pruning of living mulch roots increased cabbage yield, especially when roots were pruned twice. | (Båth et al. 2008) |
| Cabbage | Perennial ryegrass | Oregon, USA | Mechanical, chemical  | Mechanical (mowing) and chemical (fluazifop-P-butyl, 0.17 kg ai ha−1) suppression were similar under low water availability, but chemical suppression was superior with more irrigation. | (Graham and Crabtree 1987) |
| Cabbage (white) | Subterranean clover, white clover | Norway | Mechanical  | Mowing once or twice did not affect cabbage yield losses, but rototilling 6 wk after cabbage transplanting increased yield relative to the unsuppressed control. | (Brandsæter et al. 1998) |
| Corn (sweet) | Adzuki bean, cereal rye, oilseed radish  | Ontario and Quebec, Canada | Chemical  | Cereal rye was the most effective living mulch in the absence of herbicides, but the combination of adzuki bean and linuron plus *S*-metolachlor provided good weed control.  | (Nurse et al. 2018) |
| Corn | Alfalfa | Minnesota, USA | Chemical  | With irrigation, corn grain yields were similar between partial suppression (band or broadcast atrazine) and total suppression (herbicides or tillage). Without irrigation, the band treatment was inferior and total suppression was usually best. | (Eberlein et al. 1992) |
| Corn, soybean | Alfalfa, orchardgrass (*Dactylis glomerata* L.), smooth bromegrass, tall fescue | Illinois, USA | Chemical  | Several herbicide treatments preserved up to 60% of a grass sod without unacceptable damage to corn or soybean (tested only with tall fescue) yields. Alfalfa was harder to maintain. | (Elkins et al. 1983) |
| Corn (sweet) | Alfalfa, ladino clover (*Trifolium repens* L.), red clover, white clover | New York, USA | Mechanical, chemical  | Chemical suppression or mowing generally improved yield. In corn with white or ladino clover treated with atrazine (0.91 kg ha−1), marketable ear yields were higher than the cultivated control. | (Vrabel et al. 1981) |
| Corn | Birdsfoot trefoil, crownvetch | Pennsylvania, USA | Chemical  | Herbicide treatments of atrazine plus simazine (1.12 plus 1.12 kg ai ha−1), atrazine plus cyanazine (1.12 plus 1.12 kg ai ha−1), and atrazine plus penoxalin (1.12 plus 1.68 kg ai ha−1) produced similar corn grain yields, except for a lower yield in birdsfoot trefoil plots with atrazine plus penoxalin.  | (Hartwig 1976) |
| Corn | Birdsfoot trefoil, crownvetch, smooth bromegrass | Pennsylvania, USA | Chemical  | Across sods, successful treatments tended to include atrazine plus simazine, atrazine plus cyanazine, cyanazine, cyanazine plus dalapon, or cyanazine plus paraquat. | (Hartwig and Hoffman 1975) |
| Corn | Coastal bermudagrass, tall fescue | Georgia, USA | Mechanical, chemical | In corn with coastal bermudagrass, rototilling or suppression with black plastic generally increased grain yield over no-till treatments with maleic hydrazide (4.5 or 9 kg ha−1). | (Adams et al. 1970) |
| Corn | Coastal bermudagrass | South Carolina, USA | Mechanical  | Corn yields were similar across tillage treatments (33% to 100% surface tillage). Less aggressive tillage improved the postharvest grass stand. | (Beale and Langdale 1964) |
| Corn | Creeping red fescue (*Festuca rubra* L.), Kentucky bluegrass, white clover | Iowa, USA | Mechanical, chemical  | Grain yield was similar to the no-mulch control in Kentucky bluegrass with fall strip tillage, preplant paraquat (0.84 kg ai ha–1), and bands of glyphosate (1.0 kg ai ha–1). | (Wiggans et al. 2012) |
| Corn | Crimson clover | Georgia, USA | Chemical  | Paraquat (1.1 kg ha−1) applied in strips covering 60% to 80% of the total area promoted good clover reseeding without corn yield losses. | (Kumwenda et al. 1993) |
| Corn | Crownvetch | Pennsylvania, USA | Chemical  | Mulch suppression was often more successful with a younger crownvetch stand or preemergence applications (rather than preplant incorporated).  | (Cardina and Hartwig 1980) |
| Corn | Crownvetch | Pennsylvania, USA | Chemical  | Treatments such as atrazine plus simazine (1.12 plus 1.12 kg ai ha−1) and atrazine plus cyanazine (1.12 plus 1.12 kg ai ha−1) provided good weed control, mulch suppression, and crop yield. | (Hartwig 1977) |
| Corn | Crownvetch | Pennsylvania, USA | Mechanical  | Regardless of tillage treatment (no-till, heavy disk, chisel plow, or moldboard plow), crownvetch had little effect on redroot pigweed control or crop yield. | (Hartwig and Loughran 1989) |
| Corn | Crownvetch | New York, USA | Chemical  | Glyphosate plus atrazine plus 2,4-D (0.56 plus 4.48 plus 0.56 kg ha−1) gave the highest corn yield but fall groundcover was low. Other treatments damaged crownvetch less severely. | (Linscott and Hagin 1975) |
| Corn | Crownvetch, alone or with annual rye | Pennsylvania, USA | Mechanical  | Corn yield (with crownvetch, summed over rye treatments) tended to be higher under minimum tillage than no-tillage or conventional tillage. | (Loughran and Hartwig 1987) |
| Corn | Hairy vetch | Ohio, USA | Mechanical, chemical  | When corn was planted at the vetch early bud stage (late April), vetch caused substantial yield losses if unsuppressed or partially suppressed by rolling, chopping, or mowing. Glyphosate (2.8 kg ai ha−l) reduced mulch-crop competition but also reduced weed control. | (Hoffman et al. 1993) |
| Corn | Hairy vetch | Mississippi, USA | Chemical  | Killing a band of hairy vetch before planting did not substantially reduce yield losses, but postemergence glyphosate applications (band and especially broadcast, 0.84 kg ae ha−1 applied twice) did improve yield.  | (Reddy and Koger 2004) |
| Corn | Hairy vetch | Maryland, USA | Mechanical, chemical  | Mowing did not provide full-season mulch suppression or weed control. When herbicides were applied, vetch did not have consistent effects on weed control or corn yield.  | (Teasdale 1993) |
| Corn | Italian ryegrass, white clover | Switzerland | Mechanical, chemical | Dry matter yield of corn grown with mechanically or chemically regulated clover was higher than yield with mechanically regulated grass under low nitrogen. | (Garibay et al. 1997) |
| Corn | Kentucky bluegrass, orchardgrass, smooth bromegrass, tall fescue, timothy (*Phleum pratense* L.) | West Virginia, USA | Chemical  | At one of two sites, a higher rate of atrazine (3.4 kg ha−1) was superior to a lower rate (1.7 kg ha−1) for an orchardgrass, tall fescue, or bromegrass mulch. At the other site, corn yield was sometimes higher with the lower rate (2.2 vs. 4.5 kg ha−1). | (Bennett et al. 1976) |
| Corn | Kentucky bluegrass, tall fescue | Illinois, USA | Chemical  | Treatments including maleic hydrazide, fluridamid, mefluidide, glyphosate, glyphosate plus atrazine, metolachlor, metolachlor plus atrazine, and dalapon successfully balanced erosion control and yield protection, especially when paraquat was also applied in bands. | (Elkins et al. 1979) |
| Corn | Kura clover | Wisconsin, USA | Chemical  | Herbicide-resistant corn yields were higher when clover was strongly suppressed with preplant glyphosate plus dicamba (1.66 plus 0.14 kg ae ha−1) than with the glyphosate only. Both treatments also included herbicides for band kill and postemergence applications.  | (Affeldt et al. 2004) |
| Corn | Kura clover | Minnesota, USA | Mechanical, chemical  | Rotary zone tillage increased corn yields relative to shank tillage or herbicide band kill in one of two years. | (Dobbratz et al. 2019) |
| Corn | Kura clover | Minnesota, USA | Mechanical, chemical  | A treatment combining shank and rotary zone tillage increased available nitrogen and reduced kura clover encroachment into rows relative to bands of glyphosate (4 kg ae ha−1). | (Ginakes et al. 2018) |
| Corn | Kura clover | Colorado, USA | Mechanical, chemical  | Corn grain yield was higher under strip tillage than no-till with herbicide bands in one of two years. Kura clover production did not vary with suppression treatment. | (Pearson et al. 2014) |
| Corn | Kura clover | Wisconsin, USA | Chemical  | In one of two years, applying herbicide bands to kura clover increased crop yield relative to a broadcast suppression treatment.  | (Zemenchik et al. 2000) |
| Corn | Orchardgrass | West Virginia, USA | Chemical  | Orchardgrass was suppressed by a lower rate of atrazine plus paraquat (2.2 plus 0.5 kg ai ha−1) and killed by a higher rate (4.5 plus 0.5 kg ai ha−1). | (Bennett et al. 1973) |
| Corn | Pensacola bahiagrass (*Paspalum notatum* Alain ex Flüggé) | Florida, USA | Chemical  | Combinations of paraquat plus residual herbicides permitted excessive interspecific competition. Glyphosate plus residual herbicides provided stronger grass suppression. | (Robertson et al. 1976) |
| Corn | Smooth bromegrass | Nebraska, USA | Chemical | Chemical suppression (paraquat, 2.3 L ha−1) improved yield relative to an unsuppressed treatment. | (Klocke et al. 1989) |
| Corn | Tall fescue | Georgia, USA | Chemical  | Atrazine plus paraquat (2.2 plus 0.28 kg ha−1) killed the sod, whereas atrazine alone (2.2 kg ha−1) suppressed it but permitted regrowth. | (Carreker et al. 1972) |
| Corn | Tall fescue | Georgia, USA | Chemical  | Planting corn in a 0.41-m strip of killed tall fescue resulted in higher corn yield than planting in a 0.20-m strip. | (Wilkinson et al. 1987) |
| Corn (sweet) | White clover | Oregon, USA | Mechanical, chemical | Atrazine (0.84 kg ai ha−1) provided better clover suppression for the establishment year than the growth regulator PP333 (paclobutrazol, 0.84 kg ai ha-) or mowing.  | (Cooper 1985) |
| Corn (sweet) | White clover | New York, USA | Mechanical  | Rototilling protected corn yield more effectively than mowing. Rototilling worked best when performed 2 wk rather than 4 or 6 wk after corn emergence. | (Grubinger and Minotti 1990) |
| Corn | White clover and mixed grasses | Nova Scotia, Canada | Mechanical, chemical | Corn yield tended to be higher with combined rototilling and herbicide bands than with either treatment alone or straw mulch. | (Martin et al. 1999) |
| Corn (sweet) | White clover | New York, USA | Mechanical  | Corn yield was similar between no-till and strip-till treatments with clover. Glyphosate bands in both clover treatments allowed weed establishment after the first year. | (Mohler 1991) |
| Corn (sweet) | White clover | Oregon, USA | Mechanical, chemical | Atrazine at 1.4 kg ai ha−1 effectively suppressed fall-planted clover in its second year, whereas atrazine at 0.84 kg ai ha−1 or mowing did not prevent corn yield losses. | (Peterman 1985) |
| Corn | White clover | Georgia, USA | Chemical  | Applying glyphosate plus dicamba (1.12 plus 1.20 kg ai ha−1) in a 20-cm band was preferable to a 40-cm band because the narrower band allowed greater clover persistence and regrowth. | (Sanders et al. 2017) |
| Eggplant | Crimson clover | Maryland, USA | Mechanical  | Eggplant yield was reduced by crimson clover in the first year but not the second. This difference may have reflected the switch from mowing (first year) to strip tillage (second) but did not appear to be a competition effect. | (Hooks et al. 2013) |
| Onion | Barley | North Dakota, USA | Chemical  | Onion yield losses were largely eliminated when barley was terminated before reaching 18 cm. | (Greenland 2000) |
| Soybean | Kentucky bluegrass, tall fescue | Illinois, USA | Chemical  | Herbicide treatments including paraquat (0.6 kg ha−1), paraquat plus metolachlor (0.6 plus 3.4 to 4.5 kg ha−1), paraquat plus mefluidide (0.6 plus 0.6 kg ha−1), and glyphosate plus metribuzin (1.1 plus 1.1 kg ha−1) provided a good balance between soybean yield and grass regrowth.  | (Elkins et al. 1982) |
| Soybean | Kura clover | Wisconsin, USA | Chemical  | Soybean yield tended to increase with more glyphosate applications (0.75 kg ae ha−1, one to four times), although this trend was generally not significant. | (Pedersen et al. 2009) |
| Tomato | Sunnhemp | New York, USA | Chemical  | Tomato yield and weed control were both satisfactory under two-step treatments involving a residual herbicide followed by a herbicide with greater postemergence activity, both applied postemergence at reduced rates. | (Bhaskar et al. 2020) |
| Wheat (winter) | White clover | Sweden | Chemical  | Autumn applications of diflufenican plus isoprutoron were superior to a spring application of isoprutoron only in a third consecutive crop of winter wheat. | (Bergkvist 2003) |
| Wheat (winter) | White clover | Denmark | Mechanical  | Widening rototilled strips in white clover (from 7 cm to 14 cm) reduced interspecific competition and increased crop yield. | (Thorsted et al. 2006a) |
| Wheat (winter) | White clover | Denmark | Mechanical  | Suppressing white clover with a weed brusher reduced wheat yield losses. When brushed two or three times, the intercropped plots could achieve higher yields than a wheat monocrop. | (Thorsted et al. 2006b) |
| Zucchini squash | Sunnhemp | Maryland, USA | Mechanical  | Yield losses were smaller in a year in which sunnhemp was flail mowed to 20 cm before transplanting than in years in which sunnhemp was regularly clipped to 45 cm. | (Hinds et al. 2016) |
| Zucchini squash | Winter rye | Illinois, USA | Chemical  | The living mulch may have contributed to weed control, but all rye treatments resulted in zucchini stunting due to allelopathy. There was no interaction between herbicide and cover crop treatment on zucchini yield. | (Walters and Young 2008) |

aWe list only treatments implemented as factors (including a binary yes/no factor), not treatments common to all plots.

**Supplementary Table References**

Adams WE, Pallas JE Jr, Dawson R (1970) Tillage methods for corn-sod systems in the Southern Piedmont. Agron J 62:646–649

Affeldt RP, Albrecht KA, Boerboom CM, Bures EJ (2004) Integrating herbicide-resistant corn technology in a kura clover living mulch system. Agron J 96:247–251

Båth B, Kristensen HL, Thorup-Kristensen K (2008) Root pruning reduces root competition and increases crop growth in a living mulch cropping system. J Plant Interact 3:211–221

Beale O, Langdale G (1964) The compatability [sic] of corn and coastal bermudagrass as affected by tillage methods. J Soil Water Conserv 19:238–240

Bennett O, Mathias E, Lundberg P (1973) Crop responses to no-till management practices on hilly terrain. Agron J 65:488–491

Bennett O, Mathias E, Sperow CB (1976) Double cropping for hay and no-tillage corn production as affected by sod species with rates of atrazine and nitrogen. Agron J 68:250–254

Bergkvist G (2003) Perennial Clovers and Ryegrasses as Understorey Crops in Cereals. Ph.D dissertation. Uppsala, Sweden: Swedish University of Agricultural Sciences. 40 p

Bhaskar V, Bellinder RR, Reiners S, DiTommaso A (2020) Reduced herbicide rates for control of living mulch and weeds in fresh market tomato. Weed Technol 34:55–63

Brandsæter L, Netland J, Meadow R (1998) Yields, weeds, pests and soil nitrogen in a white cabbage-living mulch system. Biol Agric Hort 16:291–309

Buck E (2018) Managing Cereal Rye Living Mulch in Snap Beans with Chemical Mowing and Preemergence Herbicides. Ph.D dissertation. Guelph, Ontario, Canada: University of Guelph. 117 p

Cardina J, Hartwig N (1980) Suppression of crownvetch for no-tillage corn. Pages 53–58 *in* Proceedings of the 34th Northeastern Weed Science Society Meeting. Beltsville, MD: Northeastern Weed Science Society

Carreker JR, Box JE Jr, Dawson RN, Beaty E, Morris H (1972) No-till corn in fescuegrass. Agron J 64:500–503

Chase CA, Mbuya OS (2008) Greater interference from living mulches than weeds in organic broccoli production. Weed Technol 22:280–285

Cooper AS (1985) Sweet Corn (*Zea mays* L.) Production in a White Clover (*Trifolium repens* L.) Living Mulch: The Establishment Year. M.S. thesis. Corvallis, OR: Oregon State University. 58 p

Dobbratz M, Baker JM, Grossman J, Wells MS, Ginakes P (2019) Rotary zone tillage improves corn establishment in a kura clover living mulch. Soil Till Res 189:229–235

Eberlein C, Sheaffer C, Oliveira V (1992) Corn growth and yield in an alfalfa living mulch system. J Prod Agric 5:332–339

Elkins D, Frederking D, Marashi R, McVay B (1983) Living mulch for no-till corn and soybeans. J Soil Water Conserv 38:431–433

Elkins D, George J, Birchett G (1982) No-till soybeans in forage grass sod. Agron J 74:359–363

Elkins D, Vandeventer J, Kapusta G, Anderson M (1979) No-tillage maize production in chemically suppressed grass sod. Agron J 71:101–105

Ellis D, Guillard K, Adams R (2000) Purslane as a living mulch in broccoli production. Am J Altern Agric 15:50–59

Garibay S, Stamp P, Ammon H, Feil B (1997) Yield and quality components of silage maize in killed and live cover crop sods. Eur J Agron 6:179–190

Ginakes P, Grossman JM, Baker JM, Dobbratz M, Sooksa-nguan T (2018) Soil carbon and nitrogen dynamics under zone tillage of varying intensities in a kura clover living mulch system. Soil Till Res 184:310–316

Graham M, Crabtree G (1987) Management of competition for water between cabbage (*Brassica oleracea*) and a perennial ryegrass (*Lolium perenne*) living mulch. Pages 113–117 *in* Proceedings of the Western Society of Weed Science, Volume 40. Boise, ID: Western Society of Weed Science

Greenland RG (2000) Optimum height at which to kill barley used as a living mulch in onions. HortScience 35:853–855

Grubinger VP, Minotti PL (1990) Managing white clover living mulch for sweet corn production with partial rototilling. Am J Altern Agric 5:4–12

Hartwig N (1977) Nutsedge control in no tillage corn with and without a crownvetch cover crop. Pages 20–23 *in* Proceedings of the 31st Northeastern Weed Science Society Meeting. Beltsville, MD: Northeastern Weed Science Society

Hartwig N, Hoffman L (1975) Suppression of perennial legume and grass cover crops for no-tillage corn. Pages 82–88 *in* Proceedings of the 29th Northeastern Weed Science Society Meeting. Salisbury, MD: Northeastern Weed Science Society

Hartwig N, Loughran J (1989) Contribution of crownvetch with and without tillage to redroot pigweed control in corn. Pages 39–42 *in* Proceedings of the 43rd Northeastern Weed Science Society Meeting. Beltsville, MD: Northeastern Weed Science Society

Hartwig NL (1976) Legume suppression for double cropped no-tillage corn in crownvetch and birdsfoot trefoil removed for haylage. Pages 82–85 *in* Proceedings of the 30th Northeastern Weed Science Society Meeting. Salisbury, MD: Northeastern Weed Science Society

Hessler AG (2013) Reduced Tillage and Living Mulches for Organic Vegetable Production. Ph.D dissertation. Lexington, KY: University of Kentucky. 90 p

Hinds J, Wang K-H, Hooks CRR (2016) Growth and yield of zucchini squash (*Cucurbita pepo* L.) as influenced by a sunn hemp living mulch. Biol Agric Hort 32:21–33

Hoffman ML, Regnier EE, Cardina J (1993) Weed and corn (*Zea mays*) responses to a hairy vetch (*Vicia villosa*) cover crop. Weed Technol 7:594–599

Hooks CR, Hinds J, Zobel E, Patton T (2013) The effects of crimson clover companion planting on eggplant crop growth, yield and insect feeding injury. Int J Pest Manag 59:287–293

Hughes B, Sweet R (1979) Living mulch: a preliminary report on grassy cover crops interplanted with vegetables. Page 109 *in* Proceedings of the 33rd Northeastern Weed Science Society Meeting. Beltsville, MD: Northeastern Weed Science Society

Klocke N, Nichols J, Grabouski P, Todd R (1989) Intercropping corn in perennial cool-season grass on irrigated sandy soil. J Prod Agric 2:42–46

Kosinski S, King J, Harker K, Turkington T, Spaner D (2011) Barley and triticale underseeded with a kura clover living mulch: effects on weed pressure, disease incidence, silage yield, and forage quality. Can J Plant Sci 91:667–687

Kumwenda J, Radcliffe D, Hargrove W, Bridges D (1993) Reseeding of crimson clover and corn grain yield in a living mulch system. Soil Sci Soc Am J 57:517–523

Linscott D, Hagin R (1975) Potential for no-tillage corn in crownvetch sods. Page 81 *in* Proceedings of the 29th Northeastern Weed Science Society Meeting. Salisbury, MD: Northeastern Weed Science Society

Loughran JC, Hartwig NL (1987) Crownvetch as influenced by tillage in a corn-crownvetch living mulch system. Pages 7–12 *in* Proceedings of the 41st Northeastern Weed Science Society Meeting. Beltsville, MD: Northeastern Weed Science Society

Martin RC, Greyson PR, Gordon R (1999) Competition between corn and a living mulch. Can J Plant Sci 79:579–586

Mohler CL (1991) Effects of tillage and mulch on weed biomass and sweet corn yield. Weed Technol 5:545–552

Nurse RE, Mensah R, Robinson DE, Leroux GD (2018) Adzuki bean [*Vigna angularis* (Willd.) Ohwi & Ohashi], oilseed radish (*Raphanus sativus* L.), and cereal rye (*Secale cereale* L.) as living mulches with and without herbicides to control annual grasses in sweet corn (*Zea mays* L.). Can J Plant Sci 99:152–158

Pearson CH, Brummer JE, Beahm AT, Hansen NC (2014) Kura clover living mulch for furrow-irrigated corn in the Intermountain West. Agron J 106:1324–1328

Pedersen P, Bures E, Albrecht K (2009) Soybean production in a kura clover living mulch system. Agron J 101:653–656

Peterman MK (1985) Sweet Corn (*Zea mays*) Production in a White Clover (*Trifolium repens*) Living Mulch: The Second Year. M.S. thesis. Corvallis, OR: Oregon State University. 66 p

Petersen J, Röver A (2005) Comparison of sugar beet cropping systems with dead and living mulch using a glyphosate-resistant hybrid. J Agron Crop Sci 191:55–63

Reddy KN, Koger CH (2004) Live and killed hairy vetch cover crop effects on weeds and yield in glyphosate-resistant corn. Weed Technol 18:835–840

Rinehold JW (1987) Beans, Cabbage, and Sugar Beets in a Chemically Suppressed Sod of Manhattan II Perennial Ryegrass. M.S. thesis. Corvallis, OR: Oregon State University. 40 p

Robertson W, Lundy H, Prine G, Currey W (1976) Planting corn in sod and small grain residues with minimum tillage. Agron J 68:271–274

Sanders Z, Andrews J, Saha U, Vencill W, Lee R, Hill N (2017) Optimizing agronomic practices for clover persistence and corn yield in a white clover–corn living mulch system. Agron J 109:2025–2032

Teasdale JR (1993) Reduced-herbicide weed management systems for no-tillage corn (*Zea mays*) in a hairy vetch (*Vicia villosa*) cover crop. Weed Technol 7:879–883

Thorsted MD, Olesen JE, Weiner J (2006a) Width of clover strips and wheat rows influence grain yield in winter wheat/white clover intercropping. Field Crops Res 95:280–290

Thorsted MD, Olesen JE, Weiner J (2006b) Mechanical control of clover improves nitrogen supply and growth of wheat in winter wheat/white clover intercropping. Eur J Agron 24:149–155

Vrabel T, Minotti P, Sweet R (1981) Legume sods as living mulches in sweet corn. Pages 158–159 *in* Proceedings of the 35th Annual Meeting Northeast Weed Science Society. Beltsville, MD: Northeastern Weed Science Society

Walters SA, Young BG (2008) Utility of winter rye living mulch for weed management in zucchini squash production. Weed Technol 22:724–728

Wiggans DR, Singer JW, Moore KJ, Lamkey KR (2012) Response of continuous maize with stover removal to living mulches. Agron J 104:917–925

Wiles LJ, William RD, Crabtree GD, Radosevich SR (1989) Analyzing competition between a living mulch and a vegetable crop in an interplanting system. J Am Soc Hortic Sci 114:1029–1034

Wilkinson S, Devine O, Belesky D, Dobson Jr J, Dawson R (1987) No-tillage intercropped corn production in tall fescue sod as affected by sod-control and nitrogen fertilization. Agron J 79:685–690

Williams E, Hayes M (1991) Growing spring cereals in a white clover (*Trifolium repens*) crop. J Agric Sci 117:23–37

Zemenchik RA, Albrecht KA, Boerboom CM, Lauer JG (2000) Corn production with kura clover as a living mulch. Agron J 92:698–705