| Authors and year*a* | Scale | Livestock | Manure | Method | GHG |
| --- | --- | --- | --- | --- | --- |
| British Columbia | | | | | |
| Zhang et al., 2013 | LCA | Dairy, Poultry, Swine | L | MX | CH₄, N₂O, NH₃ |
| Maltais-Landry et al., 2018 | Farm | Horse, Poultry | S | OB (C) | CH₄, N₂O |
| Mirmasoudi et al., 2019 | Farm | Beef | S | MD | CH₄, N₂O |
| Wang et al., 2021 | LCA | Dairy, Poultry | L | MX | CH₄, N₂O |
| Zhang et al., 2021 | LCA | Dairy | L, S | MX | CH₄, N₂O |
| VanderZaag and Baldé, 2022 | Farm | Dairy | L | OB (M) | CH₄ |
| Feng et al., 2023 | Lab | Dairy | L | MD | CH₄, N₂O, NH₃ |
| Alberta | | | | | |
| Hao et al., 2001 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Hao et al., 2004 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Sommer et al., 2004 | Farm | Beef | S | OB (C, M) | CH₄, N₂O, NH₃ |
| Clark et al., 2005 | Pilot | Swine | L | OB (I) | CH₄, N₂O |
| Hao et al., 2005 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Hao et al., 2007 | Lab | Beef | L | OB (I) | CH₄, N₂O, NH₃ |
| Hao, 2007 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Xu et al., 2007 | Field | Beef | S | OB (C) | CH₄, N₂O |
| Xu et al., 2007 | Field | Beef | S | OB (C) | CH₄, N₂O |
| McDonald et al., 2008 | Lab | Dairy, Poultry, Swine | L, S | OB (I) | CH₄ |
| Hao et al., 2009 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Beauchemin et al., 2010 | LCA | Beef | L, S | MX | CH₄, N₂O |
| Gilroyed et al., 2010 | Lab | Beef | L | OB (I) | CH₄, NH₃ |
| Flesch et al., 2011 | Farm | Beef | L, S | OB (M) | CH₄ |
| Hao et al., 2011 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Hao et al., 2011 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Hao et al., 2011 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Basarab et al., 2012 | LCA | Beef | L, S | MX | CH₄, N₂O |
| McGinn and Beauchemin, 2012 | Farm | Dairy | L, S | OB (M) | CH₄ |
| Flesch et al., 2013 | Farm | Swine | L | OB (M) | CH₄ |
| Hunerberg et al., 2014 | LCA | Beef | L, S | MX | CH₄, N₂O |
| Lee et al., 2016 | Lab | Beef | L | OB (I) | CH₄, N₂O, NH₃ |
| Withey et al., 2016 | Lab | Dairy | L | OB (I) | CH₄ |
| Hao and Larney, 2017 | Pilot | Beef | S | OB (C) | CH₄, N₂O |
| Alvarez-Hess et al., 2019 | LCA | Dairy | S | MX | CH₄, N₂O |
| Dimitrov and Wang, 2019 | Farm | Beef, Dairy, Poultry, Sheep, Swine | L, S | MD | CH₄, N₂O |
| McGinn et al., 2019 | Farm | Beef | L, S | OB (M) | CH₄ |
| Owens et al., 2020 | Farm | Beef | S | OB (C) | CH₄, N₂O, NH₃ |
| Romero et al., 2022 | Farm | Beef | S | OB (C) | CH₄, N₂O |
| Wedwitschka et al., 2022 | Pilot | Dairy | S | OB (I) | CH₄ |
| Saskatchewan | | | | | |
| Laguë et al., 2005 | Farm | Swine | L | OB (C) | CH₄, N₂O |
| Huang and Guo, 2019 | Farm | Poultry | S | OB (C) | CH₄, N₂O |
| Chen et al., 2020 | LCA | Beef | L, S | MX | CH₄, N₂O |
| Manitoba | | | | | |
| Boadi et al., 2004 | Farm | Beef | L, S | OB (C, O) | CH₄, N₂O |
| Huang et al., 2010 | Lab | Swine | L | OB (I), MD | CH₄ |
| Stewart et al., 2014 | Farm | Beef | L, S | MX | CH₄, N₂O, NH₃ |
| Alemu et al., 2016 | Farm | Beef | L, S | MD | CH₄, N₂O |
| Alemu et al., 2016 | LCA | Dairy, Swine | L, S | MX | CH₄, N₂O |
| Flores-Orozco et al., 2020 | Lab | Dairy | L | OB (I), MD | CH₄ |
| VanderZaag et al., 2022 | Farm | Swine | L | OB (M) | CH₄ |
| Ontario | | | | | |
| Kinsman et al., 1995 | Farm | Dairy | L, S | OB (C) | CH₄ |
| Brown et al., 2000 | Lab | Dairy | S | OB (I) | N₂O |
| Kaharabata et al., 2000 | Farm | Dairy | L, S | OB (M) | CH₄ |
| Brown et al., 2002 | Farm | Dairy | S | OB (M) | N₂O |
| Thompson et al., 2004 | Farm | Swine | L | OB (C) | CH₄, N₂O |
| Pattey et al., 2005 | Pilot | Beef, Dairy | L, S | OB (C) | CH₄, N₂O |
| Park et al., 2006 | Farm | Swine | L | OB (M) | CH₄ |
| Wagner-Riddle et al., 2006 | Farm | Swine | L | OB (M) | CH₄, N₂O |
| Gao et al., 2008 | Farm | NA | L, S | OB (M) | CH₄ |
| Park and Wagner-Riddle, 2010 | Farm | Swine | L | OB (M) | CH₄, N₂O |
| Park et al., 2010 | Farm | Swine | L | OB (C, M) | CH₄ |
| Roumeliotis et al., 2010 | Farm | Poultry | L | OB (C) | CH₄ |
| VanderZaag et al., 2011 | Farm | Dairy | L | OB (M) | CH₄ |
| Jayasundara and Wagner-Riddle, 2014 | LCA | Dairy | L, S | MX | CH₄, N₂O |
| Ngwabie et al., 2014 | Farm | Dairy | L, S | OB (M), MD | CH₄, N₂O, NH₃ |
| VanderZaag et al., 2014 | Farm | Dairy | L, S | OB (M) | CH₄ |
| Baldé et al., 2016a | Farm | Dairy | L | OB (M) | CH₄ |
| Baldé et al., 2016b | Farm | Dairy | L | OB (M) | CH₄ |
| Baldé et al., 2016c | Farm | Dairy | L | OB (M) | CH₄ |
| Fillingham et al., 2017 | Farm | Dairy | S | OB (M) | CH₄, N₂O, NH₃ |
| Guest et al., 2017 | LCA | Dairy | L, S | MX | CH₄, N₂O |
| Habtewold et al., 2018 | Lab | Dairy | L | OB (I) | CH₄ |
| Kariyapperuma et al., 2018 | Farm | Dairy | L | OB (M) | CH₄, NH₃ |
| Maldaner et al., 2018 | Farm | Dairy | L | OB (M) | CH₄ |
| VanderZaag et al., 2018 | Farm | Dairy | L, S | OB (I) | CH₄ |
| Hoseeini Koupaie et al., 2019 | Lab | Dairy | L | OB (I) | CH₄ |
| VanderZaag et al., 2019 | Farm | Dairy | L | OB (M) | CH₄ |
| Boh and Clark, 2020 | Farm | Beef, Dairy, Poultry, Sheep, Swine | L, S | MD | N₂O, NH₃ |
| Debruyn et al., 2020 | Farm | Dairy | L | OB (M) | CH₄ |
| Johannesson et al., 2020 | Lab | Dairy, Poultry | L, S | OB (I) | CH₄ |
| Adghim et al., 2021 | Lab | Poultry | S | OB (I) | CH₄ |
| Arias et al., 2021 | Pilot | Swine | L, S | OB (I) | CH₄ |
| Bhatt and Abbassi, 2022 | LCA | Sheep | S | MX | CH₄, N₂O |
| Adghim et al., 2023 | Lab | Poultry | S | OB (I) | CH₄ |
| Quebec | | | | | |
| Massé et al., 1996 | Lab | Swine | L | OB (I) | CH₄ |
| Kaharabata et al., 1998 | Farm | Dairy, Swine | L | OB (C) | CH₄ |
| Massé and Droste, 2000 | Lab | Swine | L | MD | CH₄ |
| Massé et al., 2000 | Lab | Swine | L, S | OB (I) | CH₄, NH₃ |
| Massé et al., 2003 | Lab | Dairy, Swine | L | OB (I) | CH₄ |
| Massé et al., 2003 | Lab | Swine | L | OB (I) | CH₄, NH₃ |
| Nohra et al., 2003 | Lab | Swine | L | OB (I) | CH₄, NH₃ |
| Massé et al., 2008 | Farm | Dairy | L | MD | CH₄ |
| Fournel et al., 2012 | Farm | Poultry | L | OB (C) | CH₄, N₂O |
| Frigon et al., 2012 | Lab | Dairy | L | OB (C) | CH₄ |
| Girard et al., 2012 | Lab | Swine | L | OB (I) | CH₄ |
| Xia et al., 2012 | Lab | Swine | L | OB (I) | CH₄ |
| Barret et al., 2013 | Lab | Dairy, Swine | L | OB (I) | CH₄ |
| Giard et al., 2013 | Farm | Swine | L | OB (C) | CH₄ |
| Massé et al., 2013 | Lab | Swine | L | OB (I) | CH₄ |
| Saady and Massé, 2013 | Lab | Dairy | L | OB (I) | CH₄ |
| Massé et al., 2014 | Lab | Swine | L | OB (I) | CH₄, NH₃ |
| Tartakovsky et al., 2014 | Lab | Dairy | L | OB (I) | CH₄ |
| Massé and Saady, 2015 | Pilot | Dairy | L | OB (I) | CH₄ |
| Saady and Massé, 2015 | Pilot | Dairy | L | OB (I) | CH₄ |
| Massé et al., 2016 | Pilot | Dairy | L | OB (C) | CH₄ |
| Saady and Massé, 2016 | Pilot | Dairy | L | OB (I) | CH₄ |
| Guyader et al., 2017 | LCA | Dairy | S | MX | CH₄, N₂O, NH₃ |
| Little et al., 2017 | LCA | Dairy | L, S | MX | CH₄, N₂O |
| Fedrizzi et al., 2018 | Lab | Dairy | L | OB (I) | CH₄ |
| Benchaar and Hassanat, 2019 | Farm | Dairy | L | OB (I) | CH₄ |
| Fournel et al., 2019 | Farm | Dairy | L, S | MD | CH₄, N₂O |
| Hassanat and Benchaar, 2019 | Farm | Dairy | L | OB (I) | CH₄ |
| McVoitte and Clark, 2019 | Pilot | Dairy | L | OB (I) | CH₄ |
| Rajagopal et al., 2019 | Lab | Dairy | L | OB (I) | CH₄ |
| Benchaar and Hassanat, 2020 | Farm | Dairy | L, S | OB (C, I) | CH₄ |
| Létourneau et al., 2020 | Farm | Swine | S | OB (C) | CH₄, N₂O, NH₃ |
| Benchaar and Hassanat, 2021 | Farm | Dairy | L, S | OB (C, I) | CH₄ |
| Mahato et al., 2022 | Pilot | Poultry | L, S | OB (I) | CH₄ |
| Mahato et al., 2023 | Lab | Poultry | S | OB (I) | CH₄, NH₃ |
| Nova Scotia | | | | | |
| VanderZaag et al., 2009 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| VanderZaag et al., 2010 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| VanderZaag et al., 2010 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Wood et al., 2012 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Wood et al., 2013 | Pilot | Dairy | L | OB (C) | CH₄, N₂O |
| Wood et al., 2014 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Le Riche et al., 2016 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Le Riche et al., 2016 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Ngwabie et al., 2016 | Pilot | Dairy | L | OB (C) | CH₄ |
| Habtewold et al., 2017 | Pilot | Dairy | L | OB (C) | CH₄ |
| Sokolov et al., 2019 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Sokolov et al., 2019 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Le Riche et al., 2020 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Sokolov et al., 2020 | Pilot | Dairy | L | OB (C) | CH₄, N₂O, NH₃ |
| Sokolov et al., 2021 | Pilot | Dairy | L | OB (C) | CH₄, N₂O |
| Sokolov et al., 2021 | Lab | Dairy | L | OB (I) | CH₄ |
| Multiple | | | | | |
| Levin et al., 2007 | Farm | Beef, Dairy, Poultry, Swine | L, S | MD | CH₄ |
| Vergé et al., 2007 | LCA | Dairy | L, S | MX | CH₄, N₂O |
| Alemu et al., 2017 | Farm | Beef | L, S | MD | CH₄, N₂O |
| Cluett et al., 2020 | Lab | Dairy | L | OB (I) | CH₄ |
| Liang et al., 2020 | Farm | Beef, Dairy | L, S | MD | CH₄, N₂O |
| Binggeli et al., 2021 | LCA | Dairy | L | MX | CH₄, N₂O |
| Holtshausen et al., 2021 | LCA | Dairy | S | MX | CH₄, N₂O |
| Rennie et al., 2021 | Farm | Dairy | L | MD | CH₄ |
| Hung et al., 2022 | Farm | Dairy | L | MD | CH₄ |
| Turner et al., 2022 | LCA | Poultry | S | MX | CH₄, N₂O, NH₃ |
| Hung et al., 2023 | LCA | Dairy | S | MD | CH₄ |
| Yang et al., 2023 | Lab | NA | NA | MD | N₂O, NH₃ |
| NA: Not applicable | | | | | |
| *a*Three or more authors are summarized in \*et al.\* | | | | | |