**Supplementary Table 1:** Study characteristics for 97 trials from 76 publications evaluating the impact of litter management on mortality, morbidity, and condemnations at slaughter in broiler chickens. Bolded outcomes represent those included in the network meta-analysis for mortality or for the presence or absence of footpad lesions.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Country** | **Setting** | **Month and Year conducted** | **# farms** | **Intervention type** | **Outcomes** |
| Abreu et al., 2011 | NR | NR | Aug.- Dec. 2002 | 2 | Flooring type | Mortality |
| Aggarwal et al., 1978 | NR | NR | NR | 1 | Fresh versus used | Mortality |
| Akpobome and Fanguy, 1992\* | NR | University/research flock(s) | NR | 1 | Flooring type | Mortality, Breast blisters (binary) |
| Akpobome and Fanguy, 1992\* | NR | University/research flock(s) | NR | 1 | Flooring type | Mortality. Breast blisters (binary) |
| Al-Homidan et al., 2017 | NR | NR | NR | 1 | Litter type | Mortality |
| Ali et al, 2000 | Egypt | University/research flock(s) | NR | 1 | Additive | Mortality |
| Anisuzzaman and Chowdhury, 1996 | NR | NR | NR | 1 | Litter type | Mortality, Breast blisters (binary) |
| Atapattu and Wickramasinghe, 2007 | NR | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Atencio et al., 2010 | NR | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Avdalovic et al., 2017 | Serbia | University/research flock(s) | Sept. – Nov. 2015 | 1 | Litter type | Mortality, footpad lesion scores\*\*, Footpad lesions (binary) |
| Balogun et al., 1999 | NR | NR | NR | 1 | Fresh versus used | Mortality |
| Bjedov et al., 2013 | Serbia | University/research flock(s) | NR | 1 | Additive | Mortality, Footpad lesions (binary) |
| Brown et al., 1977\* | USA | University/research flock(s) | NR | 1 | Litter depth | Mortality, Breast blisters (binary) |
| Brown et al., 1977\* | USA | University/research flock(s) | NR | 1 | Litter depth | Mortality, Breast blisters (binary) |
| Brown et al., 1977\* | USA | University/research flock(s) | NR | 1 | Litter depth | Mortality, Breast blisters (binary) |
| Cavusoglu et al., 2018 | Turkey | University/research flock(s) | NR | 1 | Flooring type | Footpad lesions (binary) |
| Cengiz et al., 2013 | NR | NR | NR | 1 | Flooring type | Mortality, Footpad lesions (binary) |
| Choi and Moore, 2008 | USA | University/research flock(s) | NR | 1 | Additive | Mortality |
| Chuppava et al., 2018 | NR | NR | NR | 3 | Flooring type | Mortality, Footpad lesion scores |
| Davis et al., 2015\* | NR | University/research flock(s) | Oct. – Dec., NR | 1 | Litter type | Footpad lesion scores |
| Davis et al., 2015\* | NR | University/research flock(s) | Jan. - March 2015 | 1 | Litter type | Footpad lesion scores |
| Davis et al., 2015\* | NR | University/research flock(s) | March 2015 | 1 | Litter type | Footpad lesion scores |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Do et al., 2005\* | NR | Commercial flock(s) | NR | 1 | Additive | Mortality |
| Garces et al., 2017 | Mozambique | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Garces-Gudino et al., 2018 | Ecuador | NR | NR | 3 | Fresh versus used | Mortality |
| Garcia et al., 2012\* | Brazil | University/research flock(s) | NR | 1 | Litter type | Breast blisters (binary), Bruises (binary), Footpad lesions (binary) |
| Garcia et al., 2012\* | Brazil | University/research flock(s) | NR | 1 | Litter type | Breast blisters (binary), Bruises (binary), Footpad lesions (binary) |
| Garrido et al., 2004 | Norway | NR | NR | 1 | Additive | Mortality, Condemnations at slaughter |
| Gholap et al., 2012 | NR | Commercial flock(s) | NR | 3 | Additive | Footpad lesions (binary) |
| Grimes et al., 2006 | NR | University/research flock(s) | NR | 1 | Additive | Hock lesion scores, Footpad lesion scores |
| Hafeez et al., 2009 | Pakistan | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Haque and Chowdhury, 1994 | NR | NR | NR | 1 | Litter depth | Mortality |
| Homidan et al., 1997 | NR | NR | NR | 1 | Litter depth | Mortality |
| Huff et al., 1984 | NR | NR | NR | 1 | Additive | Mortality |
| Hussain et al., 1996 | Pakistan | University/research flock(s) | NR, 1992 | 1 | Litter type | Mortality |
| Jones and Hagler, 1982 | NR | Commercial flock(s) | NR | 1 | Fresh versus used | Mortality, Condemnations at slaughter |
| Kheravii et al., 2017 | Australia | Commercial flock(s) | NR | 1 | Litter type | Mortality |
| Khosravinia, 2006 | NR | Commercial flock(s) | NR | 1 | Litter type | Mortality |
| Li et al., 2013 | USA | University/research flock(s) | NR | 2 | Additive | Footpad lesion scores |
| Li et al., 2013 | USA | University/research flock(s) | Aug. - May 2011-2012 | 3 | Additive | Mortality |
| Liang et al., 2014 | USA | University/research flock(s) | May - April 2011-2012 | 3 | Windrowing | Footpad lesion scores |
| Lien et al., 1992\* | NR | NR | NR | 1 | Litter type | Mortality, Breast blisters (binary), Leg lesions (binary) |
| Lien et al., 1992\* | NR | NR | NR | 1 | Litter type | Mortality, Breast blisters (binary), Leg lesions (binary) |
| Lien et al., 2008 | USA | NR | Sept. – Nov., NR | 1 | Litter type | Mortality |
| Malone and Chaloupka, 1983\* | NR | NR | NR | 1 | Litter type | Mortality |
| Malone and Chaloupka, 1983\* | NR | NR | NR | 1 | Litter type | Mortality |
| Malone and Chaloupka, 1983\* | NR | NR | NR | 1 | Litter type | Mortality |
| Malone and Gedamu, 1995 | NR | Commercial flock(s) | NR | 1 | Litter type, Fresh versus used | Mortality, Breast lesion scores |
| Malone et al., 1990\* | NR | NR | NR | 1 | Litter type | Mortality, Breast lesion scores |
| Malone et al., 1990\* | NR | NR | NR | 1 | Litter type, Fresh versus used | Mortality, Breast lesion scores |
| Maurice et al., 1998 | NR | Commercial flock(s) | April-May, NR | 1 | Additive | Mortality, Leg lesion scores |
| McGovern et al., 2000 | NR | NR | NR | 2 | Additive | Mortality |
| Meluzzi et al., 2008 | Italy | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Mendes et al., 2011 | Brazil | NR | Sept.–Nov. 2008 | 1 | Litter type | Mortality, Footpad lesion scores |
| Mihai et al., 2013 | Romania | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Mihai et al., 2013 | Romania | University/research flock(s) | NR | 1 | Litter type | Mortality, Footpad lesions (binary) |
| Mizu et al., 1998 | NR | NR | NR | 1 | Litter depth | Mortality |
| Nowaczewski et al., 2011 | Poland | Commercial flock(s) | NR | 2 | Litter type | Mortality, Footpad lesion scores, Footpad lesions (binary) |
| Nunes et al., 2012 | NR | University/research flock(s) | NR | 1 | Fresh versus used | Mortality |
| Onbasilar et al., 2013 | Turkey | NR | NR | 1 | Litter type | Breast blisters (binary) |
| Petek et al., 2010 | NR | University/research flock(s) | NR | 1 | Litter depth | Mortality, Footpad lesions (binary) |
| Petek et al., 2014 | NR | University/research flock(s) | NR | 1 | Litter type | Mortality |
| Popescu et al., 2018 | Romania | Commercial flock(s) | NR | 2 | Litter type | Mortality, Breast blisters (binary), Hock burn (binary), Footpad lesions (binary) |
| Purswell et al., 2013 | NR | University/research flock(s) | Sept. 2011 | 3 | Additive | Mortality, Footpad lesions (binary) |
| Ramadan and El-Khloya, 2017 | NR | NR | NR | 1 | Litter type | Mortality, Hock lesion scores, Footpad lesion scores |
| Ritz et al., 2016 | NR | NR | NR | 1 | Additive | Mortality, Footpad lesions (binary) |
| Sahoo et al., 2017 | NR | NR | Dec. 2012 – Jan. 2013 | 1 | Additive | Mortality, Breast blisters (binary), Footpad lesions (binary) |
| Santiago et al., 2006 | USA | Commercial flock(s) | NR | 1 | Litter type | Mortality |
| Sarica and Cam, 2000 | NR | Commercial flock(s) | NR | 1 | Litter type | Breast lesion scores, Breast blisters (binary) |
| Senaratna et al., 2007 | NR | NR | NR | 1 | Litter type | Mortality |
| Shakila and Naidu, 1998 | NR | NR | NR | 1 | Litter type | Mortality |
| Shao et al., 2015 | China | University/research flock(s) | Oct. – Nov. 2013 | 1 | Litter depth | Mortality, Breast lesion scores, Hock lesion scores, Footpad lesion scores, Gait score |
| Shepherd et al., 2017\* | NR | NR | NR | 1 | Litter depth, Fresh versus used | Mortality, Footpad lesions (binary) |
| Shepherd et al., 2017\* | NR | NR | NR | 1 | Litter depth | Mortality, Footpad lesions (binary) |
| Shepherd et al., 2017\* | NR | NR | NR | 1 | Litter depth | Mortality, Footpad lesions (binary) |
| Sirri et al., 2007 | NR | NR | May - June, NR | 1 | Litter type | Mortality, Footpad lesion scores |
| Skrbic et al., 2015 | NR | NR | NR | 1 | Litter type | Hock lesion scores, Footpad lesion scores, Hock burn (binary), Footpad lesions (binary) |
| Stojčić et al., 2016 | Serbia | University/research flock(s) | NR | 1 | Additive | Footpad lesions (binary) |
| Swain and Sundaram, 2000 | NR | NR | June - July, NR | 1 | Litter type | Mortality, Breast blisters (binary) |
| Teixeira et al., 2015\* | NR | NR | NR | 1 | Litter type | Mortality |
| Teixeira et al., 2015\* | NR | NR | NR | 1 | Litter type | Mortality |
| Teixeira et al., 2015\* | NR | NR | NR | 1 | Litter type | Mortality |
| van Harn et al., 2012 | Netherlands | University/research flock(s) | NR | 1 | Litter type | Mortality, Footpad lesion scores |
| Vargas-Galicia et al., 2017 | Mexico | University/research flock(s) | NR | 1 | Additive | Abnormal gait, Footpad lesions (binary) |
| Vieira and Moran, 1999 | USA | University/research flock(s) | NR | 1 | Fresh versus used | Mortality, Breast blisters (binary) |
| Villagrá, et al., 2011 | Spain | University/research flock(s) | NR | 1 | Litter type | Mortality, Breast lesion scores, Hock lesion scores, Footpad lesion scores, Gait score |
| Watts et al., 2017\* | USA | University/research flock(s) | March - Aug. 2017 | 1 | Litter type | Mortality, Footpad lesions (binary) |
| Watts et al., 2017\* | USA | University/research flock(s) | March - Aug., NR | 1 | Litter type | Mortality, Footpad lesions (binary) |
| Watts et al., 2017\* | USA | University/research flock(s) | March - Aug., NR | 1 | Litter type | Mortality, Footpad lesions (binary) |
| Willis et al., 1997 | NR | Commercial flock(s) | NR | 4 | Litter type | Mortality, Breast lesion scores |
| Wyatt and Goodman, 1992 | NR | Commercial flock(s) | NR | 1 | Litter type | Mortality, Breast blisters (binary), Bruises (binary), Scabs (binary), |
| Xu et al., 2015 | NR | Commercial flock(s) | NR | 1 | Fresh versus used | Mortality |

**Supplementary Table 2**. Risk ratio comparisons for mortality as an outcome for litter management interventions in a network meta-analysis of litter management in broiler chickens. The upper right hand section of the table represents the risk ratio between the numerator (upper left treatment) and denominator (lower right treatment). The lower left section of the table represents the 95% credibility interval for the comparison, with the rows and columns reversed.



**Supplementary Table 3.** Mean ranking of litter management interventions for mortality as an outcome from a Bayesian network meta-analysis of litter management in broiler chickens. Mean rank, standard deviation and quartile rankings are shown.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Intervention arm | Mean rank | SD | 2.50% | 50% | 97.50% |
| Kenaf core | 11.66 | 6.48 | 3 | 10 | 28 |
| Gypsum | 13.68 | 7.25 | 3 | 12 | 31 |
| Sugarcane | 14.04 | 10.22 | 2 | 11 | 36 |
| Sodium bisulphate | 15.61 | 5.84 | 6 | 15 | 28 |
| Paper | 17.71 | 6.68 | 6 | 17 | 31 |
| Aluminum | 19.14 | 8.72 | 5 | 18 | 35 |
| Coir dust | 20.28 | 15.08 | 1 | 19 | 41 |
| Silage maize | 20.76 | 7.47 | 7 | 21 | 34 |
| Husks | 20.91 | 4.77 | 12 | 21 | 30 |
| Shavings | 21.23 | 3.27 | 15 | 21 | 28 |
| Sand | 21.42 | 6.06 | 10 | 22 | 33 |
| Grass | 22.24 | 7.18 | 8 | 23 | 34 |
| No bedding | 23.21 | 8.24 | 7 | 24 | 36 |
| Peat moss | 25.96 | 12.54 | 2 | 31 | 41 |
| Straw | 27.75 | 4 | 19 | 28 | 35 |
| Leaves | 30.34 | 6.71 | 13 | 32 | 39 |
| Corn cobs | 36.53 | 4.32 | 24 | 38 | 41 |

**Supplementary Table 4:** Results of the indirect comparisons for the consistency assumption for mortality as an outcome in a network meta-analysis of litter management options in broiler chickens. Columns represent posterior means (d) and standard deviations (sd) of the log-odds ratio of vaccine effects calculated using direct evidence (d), all evidence (MTC), and indirect evidence (rest); w and sd\_w represent the inconsistency estimate and its standard deviation.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Comparison | d\_dir | sd\_dir | d\_MTC | sd\_MTC | d\_rest | sd\_rest | w | sd\_w | p\_value |
| GRASS vs SH\_GR | -0.01 | 3.51 | -0.05 | 1.11 | -0.05 | 1.17 | 0.05 | 3.7 | 0.99 |
| GYPS vs SH\_GY | 0.07 | 2.88 | 0.15 | 0.21 | 0.15 | 0.21 | -0.08 | 2.88 | 0.98 |
| HU\_PA vs HUSK | 0.21 | 2.99 | 0.27 | 0.74 | 0.27 | 0.76 | -0.06 | 3.09 | 0.99 |
| HUSK vs GRASS | -0.14 | 2.9 | 0.03 | 0.17 | 0.03 | 0.17 | -0.17 | 2.91 | 0.95 |
| HUSK vs ALUM | 0.03 | 1.37 | -0.05 | 0.25 | -0.05 | 0.26 | 0.08 | 1.39 | 0.96 |
| HUSK vs SAND | -0.66 | 1.86 | 0.01 | 0.14 | 0.02 | 0.14 | -0.68 | 1.87 | 0.72 |
| HUSK vs SH\_SA | 0.17 | 2.85 | -0.1 | 0.23 | -0.1 | 0.23 | 0.27 | 2.86 | 0.93 |
| HUSK vs AL\_CA | 0.02 | 1.36 | 0.03 | 0.27 | 0.03 | 0.27 | -0.01 | 1.38 | 1 |
| HUSK vs STR | -0.49 | 1.16 | 0.17 | 0.12 | 0.18 | 0.12 | -0.67 | 1.16 | 0.56 |
| HUSK vs COIR | 0.01 | 3.09 | -0.01 | 0.88 | -0.02 | 0.92 | 0.03 | 3.22 | 0.99 |
| K vs HUSK | -0.05 | 2.98 | 0.05 | 0.35 | 0.05 | 0.35 | -0.1 | 3 | 0.97 |
| KENAF vs KE\_SH | 0.37 | 2.89 | 0.48 | 0.27 | 0.48 | 0.27 | -0.11 | 2.9 | 0.97 |
| SHAV vs FL\_H | -0.43 | 2.91 | -0.44 | 0.3 | -0.44 | 0.3 | 0.01 | 2.92 | 1 |
| SHAV vs FL\_L | -0.68 | 3.01 | -0.76 | 0.88 | -0.76 | 0.92 | 0.08 | 3.15 | 0.98 |
| SHAV vs GRASS | 0.11 | 1.71 | 0.03 | 0.2 | 0.03 | 0.2 | 0.09 | 1.72 | 0.96 |
| SHAV vs GYPS | -0.07 | 0.83 | -0.22 | 0.23 | -0.23 | 0.24 | 0.17 | 0.86 | 0.85 |
| SHAV vs HUSK | 0.08 | 0.21 | 0 | 0.13 | -0.05 | 0.15 | 0.12 | 0.26 | 0.64 |
| SHAV vs KE\_SH | 0.28 | 2.89 | 0.18 | 0.29 | 0.18 | 0.29 | 0.1 | 2.9 | 0.97 |
| SHAV vs KENAF | -0.36 | 1.45 | -0.3 | 0.23 | -0.3 | 0.23 | -0.06 | 1.47 | 0.97 |
| SHAV vs LA | 0.23 | 2.86 | 0.24 | 0.24 | 0.24 | 0.24 | -0.01 | 2.87 | 1 |
| SHAV vs ALUM | 0 | 3.2 | -0.05 | 0.29 | -0.05 | 0.29 | 0.05 | 3.21 | 0.99 |
| SHAV vs LEAF | 0.46 | 0.98 | 0.32 | 0.27 | 0.31 | 0.28 | 0.15 | 1.02 | 0.88 |
| SHAV vs NO\_BED | 0.04 | 0.81 | 0.06 | 0.24 | 0.06 | 0.25 | -0.02 | 0.85 | 0.98 |
| SHAV vs PAPER | -0.13 | 0.25 | -0.09 | 0.18 | -0.05 | 0.25 | -0.09 | 0.36 | 0.81 |
| SHAV vs PEAT | 0.21 | 2.93 | 0.26 | 0.63 | 0.27 | 0.65 | -0.05 | 3 | 0.99 |
| SHAV vs SA | 0.14 | 2.87 | 0.16 | 0.38 | 0.16 | 0.38 | -0.02 | 2.89 | 0.99 |
| SHAV vs SAND | 0.12 | 0.45 | 0.01 | 0.15 | 0 | 0.16 | 0.12 | 0.47 | 0.79 |
| SHAV vs SB | -0.15 | 1.24 | -0.15 | 0.16 | -0.15 | 0.16 | -0.01 | 1.25 | 1 |
| SHAV vs CA\_SH | -0.16 | 0.95 | -0.12 | 0.33 | -0.12 | 0.35 | -0.05 | 1.02 | 0.96 |
| SHAV vs SH\_GR | -0.07 | 3.19 | -0.02 | 1.19 | -0.01 | 1.29 | -0.06 | 3.44 | 0.99 |
| SHAV vs SH\_GY | 0.11 | 0.62 | -0.07 | 0.17 | -0.09 | 0.18 | 0.2 | 0.65 | 0.76 |
| SHAV vs SH\_LE | 0.75 | 2.96 | -0.04 | 0.57 | -0.07 | 0.58 | 0.81 | 3.02 | 0.79 |
| SHAV vs SH\_SA | -0.01 | 2.87 | -0.1 | 0.27 | -0.1 | 0.27 | 0.1 | 2.89 | 0.97 |
| SHAV vs SIL | -0.09 | 2.9 | -0.01 | 0.21 | -0.01 | 0.21 | -0.08 | 2.91 | 0.98 |
| SHAV vs ST\_HU\_SH | -0.01 | 1.51 | 0.04 | 0.35 | 0.05 | 0.36 | -0.06 | 1.55 | 0.97 |
| SHAV vs CANE | -0.22 | 1.09 | -0.27 | 0.42 | -0.28 | 0.45 | 0.06 | 1.18 | 0.96 |
| SHAV vs STR | 0.11 | 0.11 | 0.17 | 0.11 | 0.49 | 0.28 | -0.38 | 0.3 | 0.21 |
| SHAV vs ZO | 0.03 | 3.12 | -0.06 | 1 | -0.07 | 1.06 | 0.1 | 3.29 | 0.97 |
| SHAV vs CELL | -0.31 | 2.85 | -0.26 | 0.37 | -0.26 | 0.38 | -0.05 | 2.87 | 0.99 |
| SHAV vs COB | 0.59 | 2.89 | 0.78 | 0.37 | 0.78 | 0.37 | -0.19 | 2.91 | 0.95 |
| SHAV vs COIR | -0.01 | 3.04 | -0.02 | 0.94 | -0.02 | 0.99 | 0.01 | 3.19 | 1 |
| SHAV vs FL\_B | -0.43 | 2.89 | -0.44 | 0.3 | -0.44 | 0.3 | 0.01 | 2.9 | 1 |
| LEAF vs HUSK | -0.02 | 3.22 | -0.33 | 0.23 | -0.33 | 0.24 | 0.31 | 3.23 | 0.92 |
| LEAF vs SH\_LE | 0.62 | 2.87 | -0.36 | 0.49 | -0.39 | 0.5 | 1.01 | 2.92 | 0.73 |
| LEAF vs COB | 0.62 | 2.9 | 0.46 | 0.33 | 0.46 | 0.33 | 0.17 | 2.92 | 0.95 |
| MP vs STR | -0.07 | 2.95 | -0.07 | 0.52 | -0.07 | 0.52 | 0 | 3 | 1 |
| NR vs ALUM | 1.11 | 3.08 | -1.12 | 0.88 | -1.32 | 0.91 | 2.43 | 3.22 | 0.45 |
| NR vs OIL | -0.02 | 2.88 | 0 | 1 | 0 | 1.07 | -0.02 | 3.08 | 1 |
| NR vs SB | -1.16 | 3.1 | -1.21 | 0.92 | -1.22 | 0.96 | 0.06 | 3.25 | 0.98 |
| PAPER vs HUSK | -1.13 | 3.15 | 0.09 | 0.16 | 0.09 | 0.16 | -1.22 | 3.15 | 0.7 |
| PAPER vs SH\_PA | 0.21 | 1.26 | 0.21 | 0.24 | 0.21 | 0.25 | -0.01 | 1.29 | 1 |
| PAPER vs STR | 0.2 | 2.9 | 0.26 | 0.16 | 0.26 | 0.16 | -0.06 | 2.9 | 0.98 |
| SAND vs GRASS | -0.32 | 2.84 | 0.02 | 0.18 | 0.02 | 0.18 | -0.34 | 2.85 | 0.91 |
| SAND vs HUSK | -0.16 | 2.89 | -0.01 | 0.14 | -0.01 | 0.14 | -0.15 | 2.89 | 0.96 |
| SAND vs SH\_SA | 0.07 | 2.89 | -0.11 | 0.23 | -0.11 | 0.23 | 0.18 | 2.9 | 0.95 |
| ALUM vs SB | -0.03 | 3.54 | -0.09 | 0.25 | -0.09 | 0.25 | 0.07 | 3.55 | 0.99 |
| ALUM vs SH\_HU | -0.07 | 2.94 | -0.09 | 0.48 | -0.09 | 0.48 | 0.02 | 2.97 | 1 |
| ALUM vs ST\_SA | -0.53 | 3.08 | -0.57 | 1.04 | -0.57 | 1.1 | 0.04 | 3.28 | 0.99 |
| ALUM vs ZO | 0.02 | 3.26 | -0.01 | 0.89 | -0.01 | 0.93 | 0.03 | 3.39 | 0.99 |
| ALUM vs CSULF | 0.95 | 2.99 | 0.86 | 0.67 | 0.86 | 0.69 | 0.09 | 3.07 | 0.98 |
| SH\_GY vs GYPS | -0.29 | 0.72 | -0.15 | 0.21 | -0.14 | 0.21 | -0.16 | 0.75 | 0.84 |
| SIL vs STR | -0.13 | 2.88 | 0.17 | 0.18 | 0.18 | 0.18 | -0.31 | 2.88 | 0.92 |
| ST\_HU\_SH vs HUSK | -0.01 | 1.37 | -0.05 | 0.31 | -0.05 | 0.31 | 0.04 | 1.4 | 0.97 |
| STR vs HUSK | -0.25 | 0.8 | -0.17 | 0.12 | -0.17 | 0.12 | -0.08 | 0.81 | 0.92 |
| STR vs LEAF | 0.1 | 2.91 | 0.16 | 0.24 | 0.16 | 0.24 | -0.06 | 2.92 | 0.98 |
| STR vs SAND | -0.29 | 2.91 | -0.16 | 0.13 | -0.16 | 0.13 | -0.14 | 2.92 | 0.96 |
| STR vs ST\_HU\_SH | -0.01 | 1.39 | -0.12 | 0.31 | -0.13 | 0.32 | 0.12 | 1.43 | 0.94 |
| CANE vs CA\_SH | 0.1 | 0.97 | 0.15 | 0.38 | 0.16 | 0.42 | -0.06 | 1.06 | 0.95 |
| CSULF vs ST\_SA | 1.49 | 3.15 | -1.43 | 1.02 | -1.77 | 1.07 | 3.26 | 3.33 | 0.33 |
| FL\_B vs FL\_H | 0 | 2.84 | 0 | 0.3 | 0 | 0.3 | 0.01 | 2.86 | 1 |

**Supplementary Table 5**. Risk ratio comparison for footpad lesions as a binary outcome for litter management interventions in a network meta-analysis of litter management in broiler chickens. The upper right hand section of the table represents the posterior median of the risk ratio between the numerator (upper left treatment) and denominator (lower right treatment). The lower left section of the table represents the 95% credibility interval for the comparison, with the rows and columns reversed.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| SHAVINGS | 0.69 | 0.65 | 1.02 | 1.18 | 4.36 | 0.9 | 0.73 |
| (0.09\_1.69) | SUGAR CANE | 0.99 | 1.49 | 1.97 | 7.8 | 1.1 | 1.03 |
| (0.08\_1.46) | (0.23\_3.39) | GRASS | 1.57 | 2.1 | 8.27 | 1.14 | 1.05 |
| (0.38\_3.85) | (0.49\_20.09) | (0.57\_22.37) | GYPSUM | 1.1 | 3.85 | 0.87 | 0.72 |
| (0.49\_5.79) | (0.87\_22.06) | (0.95\_24.77) | (0.25\_7.72) | HUSK | 3.05 | 0.73 | 0.54 |
| (0.76\_118.76) | (1\_421.24) | (1\_468.94) | (0.51\_132.95) | (0.35\_101.52) | PEAT MOSS | 0.19 | 0.14 |
| (0.13\_4.77) | (0.22\_18.45) | (0.26\_20.41) | (0.08\_5.5) | (0.05\_4.27) | (0\_1.83) | SODIUM BISULPHATE | 0.96 |
| (0.18\_1.29) | (0.27\_5.7) | (0.31\_6.43) | (0.09\_1.8) | (0.09\_1.04) | (0\_1.01) | (0.09\_4.36) | STRAW |

**Supplementary Table 6.** Mean ranking of litter management interventions for footpad lesions as a binary outcome from a Bayesian network meta-analysis of litter management in broiler chickens. Mean rank, standard deviation and quartile rankings are shown.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Intervention | Mean Rank | SD | 2.50% | 50% | 97.50% |
| Grass | 13.52 | 2.61 | 6 | 14 | 16 |
| Sugarcane | 13.03 | 2.78 | 6 | 14 | 16 |
| Straw | 12.19 | 2.38 | 7 | 12 | 16 |
| Sodium bisulphate | 10.49 | 4.07 | 3 | 11 | 16 |
| Shavings | 8.39 | 1.81 | 5 | 8 | 12 |
| Gypsum | 8.08 | 3.04 | 3 | 8 | 15 |
| Peat moss | 3.1 | 2.71 | 1 | 2 | 11 |

**Supplementary Table 7:** Results of the indirect comparisons for the consistency assumption for footpad lesions as binary outcome in a network meta-analysis of litter management options in broiler chickens. Columns represent posterior means (d) and standard deviations (sd) of the log-odds ratio of vaccine effects calculated using direct evidence (d), all evidence (MTC), and indirect evidence (rest); w and sd\_w represent the inconsistency estimate and its standard deviation.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Comparison | d\_dir | sd\_dir | d\_MTC | sd\_MTC | d\_rest | sd\_rest | w | sd\_w | p\_value |
| MP vs STR | 1.53 | 1.43 | 1.52 | 1.05 | 1.5 | 1.55 | 0.03 | 2.11 | 0.99 |
| ST\_HU\_SH vs STR | -2.5 | 2.89 | 3.32 | 1.03 | 4.16 | 1.1 | -6.66 | 3.1 | 0.03 |
| SHAV vs PEAT | -2.27 | 2.99 | -2.27 | 1.51 | -2.27 | 1.75 | 0 | 3.47 | 1 |
| SHAV vs SB | 0.62 | 2.89 | 0.6 | 1.33 | 0.6 | 1.5 | 0.02 | 3.26 | 0.99 |
| SHAV vs SH\_GY | -0.11 | 1.1 | -0.11 | 0.78 | -0.11 | 1.09 | 0 | 1.55 | 1 |
| SHAV vs CA\_HU | 1.24 | 1.84 | 1.01 | 1.16 | 0.85 | 1.51 | 0.39 | 2.37 | 0.87 |
| SHAV vs ST\_HU\_SH | -3.84 | 2.91 | -2.35 | 1.18 | -2.06 | 1.29 | -1.79 | 3.18 | 0.57 |
| SHAV vs STR | 1.02 | 1.77 | 0.96 | 0.71 | 0.95 | 0.78 | 0.07 | 1.94 | 0.97 |
| SHAV vs CA\_SH | 1.23 | 1.85 | 1.02 | 1.14 | 0.89 | 1.46 | 0.34 | 2.36 | 0.89 |
| SHAV vs CANE | 1.64 | 1.81 | 1.39 | 1.13 | 1.23 | 1.45 | 0.41 | 2.31 | 0.86 |
| SHAV vs CELL | -1.71 | 3.1 | -1.72 | 1.68 | -1.72 | 1.99 | 0.01 | 3.69 | 1 |
| SHAV vs FL\_B | -1.24 | 2.92 | -1.25 | 1.37 | -1.25 | 1.55 | 0.02 | 3.31 | 1 |
| SHAV vs FL\_H | 0.61 | 2.87 | 0.61 | 1.34 | 0.61 | 1.52 | 0 | 3.25 | 1 |
| SHAV vs GRASS | 1.77 | 1.84 | 1.55 | 1.13 | 1.43 | 1.43 | 0.34 | 2.33 | 0.88 |
| SHAV vs GYPS | -0.1 | 1.4 | -0.1 | 0.79 | -0.11 | 0.95 | 0.01 | 1.69 | 1 |
| SHAV vs HUSK | -1.26 | 1.63 | -0.48 | 0.82 | -0.21 | 0.95 | -1.05 | 1.89 | 0.58 |
| CA\_SH vs CA\_HU | -0.01 | 1.66 | -0.01 | 1.15 | -0.01 | 1.61 | 0.01 | 2.31 | 1 |
| CA\_SH vs CANE | -0.38 | 1.67 | 0.37 | 1.14 | 1.03 | 1.55 | -1.41 | 2.28 | 0.54 |
| CA\_SH vs GRASS | -0.55 | 1.68 | 0.54 | 1.14 | 1.45 | 1.54 | -2 | 2.28 | 0.38 |
| CA\_SH vs HUSK | 1.25 | 1.85 | -1.5 | 1.02 | -2.71 | 1.23 | 3.96 | 2.22 | 0.07 |
| CANE vs CA\_HU | 0.36 | 1.71 | -0.38 | 1.15 | -1 | 1.55 | 1.36 | 2.31 | 0.56 |
| CANE vs GRASS | -0.16 | 1.62 | 0.16 | 1.13 | 0.47 | 1.57 | -0.63 | 2.26 | 0.78 |
| CANE vs HUSK | 1.61 | 1.8 | -1.87 | 1.01 | -3.47 | 1.22 | 5.08 | 2.18 | 0.02 |
| FL\_B vs FL\_H | -1.87 | 2.9 | 1.86 | 1.36 | 2.9 | 1.53 | -4.78 | 3.28 | 0.15 |
| GRASS vs CA\_HU | 0.53 | 1.68 | -0.55 | 1.15 | -1.49 | 1.57 | 2.02 | 2.3 | 0.38 |
| GRASS vs HUSK | 1.79 | 1.81 | -2.03 | 1.01 | -3.76 | 1.22 | 5.55 | 2.18 | 0.01 |
| GYPS vs SH\_GY | -0.01 | 0.99 | 0 | 0.78 | 0 | 1.26 | -0.01 | 1.61 | 1 |
| HUSK vs CA\_HU | -1.26 | 1.85 | 1.49 | 1.04 | 2.74 | 1.25 | -4 | 2.24 | 0.07 |
| HUSK vs ST\_HU\_SH | 1.17 | 2.92 | -1.87 | 1.05 | -2.32 | 1.12 | 3.5 | 3.12 | 0.26 |
| HUSK vs STR | -0.42 | 1.97 | 1.44 | 0.77 | 1.78 | 0.84 | -2.21 | 2.14 | 0.3 |

**Supplementary Table 8:** Grade summary of evidence for mortality as an outcome in a network meta-analysis of litter management in broiler chickens. The comparisons shown represent comparisons between litter management options; comparisons where the number of contributing studies is equal to zero represent indirect evidence.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Comparison | # of studies | Randomization | Blinding | Imprecision | Heterogeneity |
| ALUM:HUSK | 2 | Major concerns | Some concerns | Major concerns | No concerns |
| ALUM:SB | 1 | Major concerns | Some concerns | Major concerns | No concerns |
| ALUM:SHAV | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SHAV | 3 | Some concerns | Some concerns | Major concerns | No concerns |
| COB:LEAF | 1 | Some concerns | Some concerns | Some concerns | Some concerns |
| COB:SHAV | 1 | Some concerns | Some concerns | Some concerns | No concerns |
| COIR:HUSK | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:SHAV | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:HUSK | 1 | Some concerns | Some concerns | Some concerns | Some concerns |
| GRASS:SAND | 1 | Some concerns | Some concerns | Some concerns | Some concerns |
| GRASS:SHAV | 2 | Some concerns | Some concerns | Some concerns | Some concerns |
| GYPS:SHAV | 4 | Some concerns | Some concerns | Some concerns | No concerns |
| HUSK:LEAF | 1 | Some concerns | Some concerns | Some concerns | Some concerns |
| HUSK:PAPER | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:SAND | 3 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:SHAV | 10 | Some concerns | Some concerns | No concerns | Major concerns |
| HUSK:STR | 7 | Major concerns | Some concerns | Some concerns | No concerns |
| KENAF:SHAV | 2 | Some concerns | Some concerns | Some concerns | No concerns |
| LEAF:SHAV | 3 | Some concerns | Some concerns | Some concerns | Some concerns |
| LEAF:STR | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:SHAV | 3 | Major concerns | Some concerns | Major concerns | No concerns |
| PAPER:SHAV | 6 | Some concerns | Some concerns | Major concerns | No concerns |
| PAPER:STR | 1 | Some concerns | Some concerns | Some concerns | No concerns |
| PEAT:SHAV | 1 | Major concerns | Some concerns | Major concerns | No concerns |
| SAND:SHAV | 4 | Some concerns | Some concerns | Some concerns | Some concerns |
| SAND:STR | 1 | Some concerns | Some concerns | Some concerns | No concerns |
| SB:SHAV | 2 | Major concerns | Some concerns | Some concerns | No concerns |
| SHAV:SIL | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| SHAV:STR | 10 | Some concerns | Some concerns | Some concerns | No concerns |
| SIL:STR | 1 | Some concerns | Some concerns | Some concerns | No concerns |
| ALUM:CANE | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:COB | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| ALUM:COIR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:GRASS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:GYPS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:KENAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:LEAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:NO\_BED | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| ALUM:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:PEAT | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| ALUM:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| ALUM:STR | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| CANE:COB | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| CANE:COIR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:GRASS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:GYPS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:HUSK | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:KENAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:LEAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COB:COIR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COB:GRASS | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:GYPS | 0 | Some concerns | Some concerns | No concerns | No concerns |
| COB:HUSK | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:KENAF | 0 | Some concerns | Some concerns | No concerns | No concerns |
| COB:NO\_BED | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:PAPER | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COB:SAND | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:SB | 0 | Some concerns | Some concerns | No concerns | Some concerns |
| COB:SIL | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COB:STR | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| COIR:GRASS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:GYPS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:KENAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:LEAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| COIR:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:GYPS | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| GRASS:KENAF | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| GRASS:LEAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:SB | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| GRASS:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:STR | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| GYPS:HUSK | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| GYPS:KENAF | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:LEAF | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| GYPS:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:SAND | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| GYPS:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:SIL | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| GYPS:STR | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| HUSK:KENAF | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| HUSK:NO\_BED | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| HUSK:PEAT | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| HUSK:SB | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| HUSK:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| KENAF:LEAF | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| KENAF:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| KENAF:PAPER | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| KENAF:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| KENAF:SAND | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| KENAF:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| KENAF:SIL | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| KENAF:STR | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| LEAF:NO\_BED | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| LEAF:PAPER | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| LEAF:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| LEAF:SAND | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| LEAF:SB | 0 | Some concerns | Some concerns | Some concerns | No concerns |
| LEAF:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:PAPER | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:PEAT | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:SB | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| NO\_BED:STR | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| PAPER:PEAT | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| PAPER:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PAPER:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PAPER:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:SAND | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:SB | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| PEAT:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:STR | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| SAND:SB | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| SAND:SIL | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| SB:SIL | 0 | Some concerns | Some concerns | Some concerns | Some concerns |
| SB:STR | 0 | Some concerns | Some concerns | Some concerns | No concerns |

**Supplementary Table 9:** Grade summary of evidence for footpad lesions as a binary outcome in a network meta-analysis of litter management in broiler chickens. The comparisons shown represent comparisons between litter management options; comparisons where the number of contributing studies is equal to zero represent indirect evidence.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Comparison | # of studies | Randomization | Blinding | Imprecision | Heterogeneity |
| CANE:GRASS | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:HUSK | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SHAV | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:HUSK | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:SHAV | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:SHAV | 3 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:SHAV | 3 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:STR | 2 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:SHAV | 1 | Major concerns | Some concerns | Major concerns | No concerns |
| SB:SHAV | 1 | Some concerns | Some concerns | Major concerns | No concerns |
| SHAV:STR | 3 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:GYPS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| CANE:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:GYPS | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GRASS:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:HUSK | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| GYPS:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:PEAT | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| HUSK:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:SB | 0 | Some concerns | Some concerns | Major concerns | No concerns |
| PEAT:STR | 0 | Major concerns | Some concerns | Major concerns | No concerns |
| SB:STR | 0 | Some concerns | Some concerns | Major concerns | No concerns |

**Supplementary Figure 1:** Summary of individual-level risk of bias for mortality in 62 trials included in a network meta-analysis of the impact of litter management on mortality in broiler chickens.



**Supplementary** **Figure 2:** The distribution of the probability of failure (mortality) for litter management options from a network meta-analysis of litter management strategies in broiler chickens.



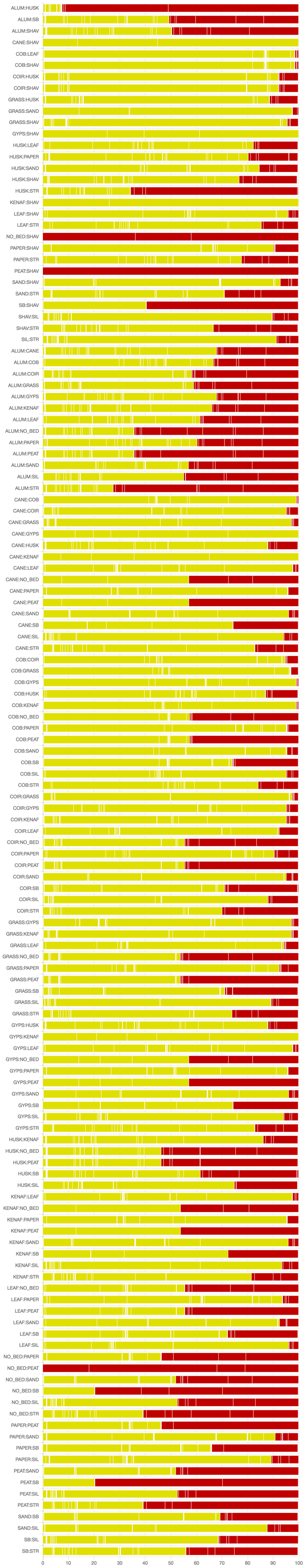
Leaves

Straw

**Supplementary** **Figure 3:** The distribution of the probability of failure (footpad lesion) for litter management options from a network meta-analysis of litter management strategies in broiler chickens.



**Supplementary** **Figure 4**: The contribution of trials to the risk ratio estimates for mortality as an outcome based on the approach to randomization; green indicates that allocation to intervention group was random and that the method of generating the random sequence was provided, yellow indicates that the authors stated that allocation was random but did not describe the method of generating the random allocation sequence, and red indicates that allocation to intervention group was not random or was not reported. White vertical lines indicate the percentage contribution of separate studies.



**Supplementary** **Figure 5**: The contribution of trials to the risk ratio estimates for footpad lesions as a binary outcome based on the approach to randomization; green indicates that allocation to intervention group was random and that the method of generating the random sequence was provided, yellow indicates that the authors stated that allocation was random but did not describe the method of generating the random allocation sequence, and red indicates that allocation to intervention group was not random or was not reported. White vertical lines indicate the percentage contribution of separate studies.

