

| | treatment codes | treatment detailed name |
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| 1 | Control | Control |
| 2 | Unmodified+OnRow_none | on row sowing with no amendments |
| 3 | Unmodified_SE14.band_8 | SE14 (wetter) banded 8cm |
| 4 | Unmodified_Bi_Agra.surface+band_8 | Bi Agra (wetter) surface and banded 8cm |
| 5 | Unmodified_Lc.surface | lucerne applied surface |
| 6 | Unmodified_Cl.surface | chicken litter applied surface |
| 7 | Unmodified_Cl@2.5.surface_Yr18,19,20 | chicken litter at 2.5t/ha applied surface in years 2018, 2019, 2020 |
| 8 | Unmodified_Cl@3.incorp_8 | chicken litter at 3t/ha incorporated 8cm |
| 9 | Unmodified_Cl@5.incorp_8 | chicken litter at 5t/ha incorporated 8cm |
| 10 | Unmodified_Cl@5.incorp_8.Fert.surface | chicken litter at 5t/ha incorporated 8cm and fertiliser applied at surface |
| 11 | Unmodified_Cl@5.incorp_8.Clay.incorp_8 | chicken litter at 5t/ha and clay incorporated 8cm |
| 12 | Unmodified_Cl@5.incorp_8.Fert.surface.Clay.incorp_8 | chicken litter at 5t/ha and fertiliser and clay incorporated 8cm |
| 13 | Unmodified_Cl@7.5.surface | chicken litter at 7.5t/ha applied surface |
| 14 | Unmodified_Cl@20.incorp_8 | chicken litter at 20t/ha incorporated 8cm |
| 15 | Unmodified_Cl@20.incorp_8.Fert.surface | chicken litter at 20t/ha and fertiliser applied at surface |
| 16 | Unmodified_Cl@20.incorp_8.Clay.incorp_8 | chicken litter at 20t/ha and clay incorporated 8cm |
| 17 | Unmodified_Cl@20.incorp_8.Fert.surface.Clay.incorp_8 | chicken litter at 20t/ha and fertiliser and clay incorporated 8cm |
| 18 | Unmodified_Fert.foliar | fertiliser applied to foliar |
| 19 | Unmodified_Fert.surface | fertiliser applied surface |
| 20 | Unmodified_Fert.incorp_8 | fertiliser incorporated 8cm |
| 21 | Unmodified_Fert.band_8 | fertiliser banded 8cm |
| 22 | Unmodified_K_added.surface | potassium applied surface |
| 23 | Unmodified_Fert.band_30 | fertiliser banded 30cm |
| 24 | Unmodified_Fert.surface.Clay.incorp_8 | fertiliser and clay incorporated 8cm |
| 25 | Unmodified_Fert.band_30.Clay.incorp_10 | fertiliser banded 30cm and clay incorporated 10cm |
| 26 | Unmodified_Clay.incorp_8 | clay incorporated 8cm |
| 27 | Unmodified_Clay.incorp_10 | clay incorporated 10cm |
| 28 | Unmodified_none.Fert.surface | growers standard fertiliser to surface with no additional amendments |
| 29 | Pre_drill_20+7.5_none | Pre drill to depth 20cm with growers standard fertiliser to 7.5cm with no additional amendments |
| 30 | Pre_drill_20+7.5_none_annual | Pre drill to depth 20cm with growers standard fertiliser to 7.5cm with no additional amendments annually |
| 31 | Pre_drill_20+20_none | Pre drill to depth 20cm with growers standard fertiliser to 20cm with no additional amendments |
| 32 | Pre_drill_20+20_none_annual | Pre drill to depth 20cm with growers standard fertiliser to 20cm with no additional amendments performed annually |
| 33 | Pre_drill_20+20_Fert.banded_20 | Pre drill to depth 20cm with growers standard fertiliser to 20cm with fertiliser banded at 20cm |
| 34 | Pre_drill_20+20_Fert.banded_20_annual | Pre drill to depth 20cm with growers standard fertiliser to 20cm with fertiliser banded at 20cm annually |
| 35 | Spade.30_none | spade 30cm with no amendments |
| 36 | Spade.30_Lc@1.incorp_30 | spade 30cm with lucerne at 1t/ha incorporated 30cm |
| 37 | Spade.30_Lc@2.incorp_30 | spade 30cm with lucerne at 2t/ha incorporated 30cm |
| 38 | Spade.30_Lc@4.incorp_30 | spade 30cm with lucerne at 4t/ha incorporated 30cm |
| 39 | Spade.30_Lc@6.incorp_30 | spade 30cm with lucerne at 6t/ha incorporated 30cm |
| 40 | Spade.30_Lc@8.incorp_30 | spade 30cm with lucerne at 8t/ha incorporated 30cm |

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| 41 | Spade.30_Lc@10.incorp_30 | spade 30cm with lucerne at 10t/ha incorporated 30cm |
| 42 | Spade.30_Lc@15.incorp_30 | spade 30cm with lucerne at 15t/ha incorporated 30cm |
| 43 | Spade.30_Lc@20.incorp_30 | spade 30cm with lucerne at 20t/ha incorporated 30cm |
| 44 | Spade.30_Lc@1.incorp_30.K_added.surface | spade 30cm with lucerne at 1t/ha incorporated 30cm and potassium applied at surface |
| 45 | Spade.30_Lc@2.incorp_30.K_added.surface | spade 30cm with lucerne at 2t/ha incorporated 30cm and potassium applied at surface |
| 46 | Spade.30_Lc@4.incorp_30.K_added.surface | spade 30cm with lucerne at 4t/ha incorporated 30cm and potassium applied at surface |
| 47 | Spade.30_Lc@6.incorp_30.K_added.surface | spade 30cm with lucerne at 6t/ha incorporated 30cm and potassium applied at surface |
| 48 | Spade.30_Lc@8.incorp_30.K_added.surface | spade 30cm with lucerne at 8t/ha incorporated 30cm and potassium applied at surface |
| 49 | Spade.30_Lc@10.incorp_30.K_added.surface | spade 30cm with lucerne at 10t/ha incorporated 30cm and potassium applied at surface |
| 50 | Spade.30_Lc@15.incorp_30.K_added.surface | spade 30cm with lucerne at 15t/ha incorporated 30cm and potassium applied at surface |
| 51 | Spade.30_Lc@20.incorp_30.K_added.surface | spade 30cm with lucerne at 20t/ha incorporated 30cm and potassium applied at surface |
| 52 | Spade.30_Lc.incorp_30 | spade 30cm with lucerne incorporated 30cm |
| 53 | Spade.30_Lc.incorp_30.Fert.incorp_30 | spade 30cm with lucerne and fertiliser incorporated 30cm |
| 54 | Spade.30_Lc.incorp_30.Clay.incorp_30 | spade 30cm with lucerne and clay incorporated 30cm |
| 55 | Spade.30_Lc.incorp_30.Fert.incorp_30.Clay.incorp_30 | spade 30cm with ulcerous and fertiliser and clay incorporated 30cm |
| 56 | Spade.30_Cl.incorp_30 | spade 30cm with chicken litter incorporated 30cm |
| 57 | Spade.30_Cl.incorp_30.Gypsum.incorp_30 | spade 30cm with chicken litter and gypsum incorporated 30cm |
| 58 | Spade.30_Fert.incorp_30.Clay.incorp_30 | spade 30cm with fertiliser and clay incorporated 30cm |
| 59 | Spade.30_Com.incorp_30 | spade 30cm with compost incorporated 30cm |
| 60 | Spade.30_Cereal.incorp_30 | spade 30cm with cereal incorporated 30cm |
| 61 | Spade.30_Vetch.incorp_30 | spade 30cm with vetch incorporated 30cm |
| 62 | Spade.30_Vet_Cer.incorp_30 | spade 30cm with vetch and cereal incorporated 30cm |
| 63 | Spade.30_Vet_Cer_In.incorp_30 | spade 30cm with vetch and cereal and inoculant incorporated 30cm |
| 64 | Spade.30_K_added.surface | spade 30cm with potassium applied at surface |
| 65 | Spade.30_Fert.incorp_30 | spade 30cm with fertiliser incorporated 30cm |
| 66 | Spade.30_Fert.incorp_30.K_added.incorp_30 | spade 30cm with fertiliser and potassium incorporated 30cm |
| 67 | Spade.30_Clay@250.incorp_30 | spade 30cm with clay at 250t/ha |
| 68 | Spade.30_Clay@500.incorp_30_Yr07,20 | spade 30cm with clay at 250t/ha in years 2007 and 2020 |
| 69 | Spade.30_Clay.incorp_30 | spade 30cm with clay incorporated 30cm |
| 70 | Spade.30_Gypsum.incorp_30 | spade 30cm with gypsum incorporated 30cm |
| 71 | Rip.30_none | Ripping to 30cm with no amendments |
| 72 | Rip.35_none | Ripping to 35cm with no amendments |
| 73 | Rip.30_Cl.surface | Ripping to 30cm with chicken litter applied at surface |
| 74 | Rip.30_Cl@7.5.surface | Ripping to 30cm with chicken litter @ 7.5t/ha applied at surface |
| 75 | Rip.30_Cl.band_30 | Ripping to 30cm with chicken litter banded at 30cm |
| 76 | Rip.30_Cl@7.5.band_30 | Ripping to 30cm with chicken litter @ 7.5t/ha banded at 30cm |
| 77 | Rip.30_Lc.incorp_30 | Ripping to 30cm with lucerne incorporated 30cm |
| 78 | Rip.30_Lc.band_30 | Ripping to 30cm with lucerne banded 30cm |
| 79 | Rip.30_Fert.surface | Ripping to 30cm with fertiliser applied at surface |
| 80 | Rip.30_Fert.incorp_30 | Ripping to 30cm with fertiliser incorporated 30cm |

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| 81 | Rip.30_Fert.band_8 | Ripping to 30cm with fertiliser banded at 8cm |
| 82 | Rip.30_Fert.band_30 | Ripping to 30cm with fertiliser banded at 30cm |
| 83 | Rip.30IncRip_none | Ripping to 30cm and inclusion with no amendments |
| 84 | Rip.30+60_none | Ripping to 30cm and 60cm with no amendments |
| 85 | Rip.30IncRip_Gypsum.incorp_30 | Ripping to 30cm and inclusion with Gypsum incorporated 30cm |
| 86 | Rip.30+60_Lc.band_30+60 | Ripping to 30cm and 60cm with lucerne banded 30cm and 60cm |
| 87 | Rip_30+7.5_none | Ripping to 30cm with growers standard fertiliser to 7.5cm with no amendments |
| 88 | Rip_30+7.5_none_annual | Ripping to 30cm with growers standard fertiliser to 7.5cm with no amendments annually |
| 89 | Rip_30+30_none | Ripping to 30cm and 30cm with no amendments annually |
| 90 | Rip_30+30_none_annual | Ripping to 30cm with growers standard fertiliser to 30cm with no amendments annually |
| 91 | Rip_30+30_Fert.banded_30 | Ripping to 30cm with growers standard fertiliser to 30cm with fertiliser banded 30cm |
| 92 | Rip_30+30_Fert.banded_30_annual | Ripping to 30cm with growers standard fertiliser to 30cm with fertiliser banded 30cm annually |
| 93 | Sweep.30_none | sweep 30cm with no amendments |
| 94 | Sweep.30_CI@3.incorp_30 | sweep 30cm with chicken litter at 3t/ha incorporated 30cm |
| 95 | Sweep.30_CI@6.incorp_30 | sweep 30cm with chicken litter at 6t/ha incorporated 30cm |
| 96 | Sweep.30_CI@9.incorp_30 | sweep 30cm with chicken litter at 9t/ha incorporated 30cm |
| 97 | Sweep.30_CI@9.incorp_30_Yr17,18,19 | sweep 30cm with chicken litter at 9t/ha incorporated 30cm applied 2017, 2018, 2019 |
| 98 | Sweep.30_Lime.incorp_30 | sweep 30cm with lime incorporated 30cm |
| 99 | Sweep.30_CI@3.incorp_30.Lime.incorp_8 | sweep 30cm with chicken litter at 3t/ha incorporated 30cm and lime incorporated 8cm |
| 100 | Rip.40_none | Ripping to 40cm with no amendments |
| 101 | Rip.40IncRip_none | Ripping to 40cm and inclusion with no amendments |
| 102 | Rip.40IncRip_Lc.incorp_40 | Ripping to 40cm and inclusion with chicken litter incorporated 40cm |
| 103 | Rip.40_Lc.incorp_40 | Ripping to 40cm with lucerne incorporated 40cm |
| 104 | Rip.40_Fert.incorp_40 | Ripping to 40cm with fertiliser incorporated 40cm |
| 105 | Rip.45_none | Ripping to 45cm with no amendments |
| 106 | Rip.45IncRip_none | Ripping to 45cm and inclusion with no amendments |
| 107 | Rip.45IncRip+Spade.30_none | Ripping to 45cm and inclusion and spading 30cm with no amendments |
| 108 | Rip.45IncRip_Fert.incorp_45 | Ripping to 45cm and inclusion with fertiliser banded 45cm |
| 109 | Rip.45IncRip_Fert_Low.band_45 | Ripping to 45cm and inclusion with fertiliser (low rate) banded 45cm |
| 110 | Rip.45IncRip_Fert_High.band_45 | Ripping to 45cm and inclusion with fertiliser (high rate) banded 45cm |
| 111 | Rip.45IncRip_Fert_APP.band_45 | Ripping to 45cm and inclusion with fertiliser (app) banded 45cm |
| 112 | Rip.50_none | Ripping to 50cm with no amendments |
| 113 | Rip.50_CI.surface | Ripping to 50cm with chicken litter applied surface |
| 114 | Rip.50_CI@2.5.surface_Yr18,19,20 | Ripping to 50cm with chicken litter at 2.5t/ha applied at surface in years 2018, 2019, 2020 |
| 115 | Rip.50_CI@7.5.surface | Ripping to 50cm with chicken litter at 7.5t/ha applied at surface |
| 116 | Rip.50_CI@5.incorp_20 | Ripping to 50cm with chicken litter at 5t/ha incorporated 20 cm |
| 117 | Rip.50_CI@7.5.band_50 | Ripping to 50cm with chicken litter at 7.5t/ha banded 50cm |
| 118 | Rip.50_CI@20.incorp_20 | Ripping to 50cm with chicken litter at 20t/ha incorporated 20 cm |
| 119 | Rip.50_CI@5.incorp_20.Fert.surface | Ripping to 50cm with chicken litter at 5t/ha incorporated 20 cm and fertiliser applied at surface |
| 120 | Rip.50_CI@5.incorp_20.Clay.incorp_20 | Ripping to 50cm with chicken litter at 5t/ha incorporated 20 cm and clay incorporated 20cm |

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| 121 | Rip.50_CI@5.incorp_20.Fert.surface.Clay.incorp_20 | Ripping to 50cm with chicken litter at 5t/ha incorporated 20 cm and fertiliser applied at surface and clay incorporated 20cm |
| 122 | Rip.50_CI@20.incorp_20.Fert.surface | Ripping to 50cm with chicken litter at 20t/ha incorporated 20 cm and fertiliser applied at surface |
| 123 | Rip.50_CI@20.incorp_20.Clay.incorp_20 | Ripping to 50cm with chicken litter at 20t/ha incorporated 20 cm and clay incorporated 20cm |
| 124 | Rip.50_CI@20.incorp_20.Fert.surface.Clay.incorp_20 | Ripping to 50cm with chicken litter at 20t/ha incorporated 20 cm and fertiliser applied at surface and clay incorporated 20cm |
| 125 | Rip.50_Fert.surface | Ripping to 50cm with fertiliser applied at surface |
| 126 | Rip.50_Clay.incorp_20 | Ripping to 50cm with clay incorporated 20cm |
| 127 | Rip.50_Fert.surface.Clay.incorp_20 | Ripping to 50cm with fertiliser applied at surface and clay incorporated 20cm |
| 128 | Rip.50Spade.30_none | Ripping to 50cm and spading 30cm with no amendments |
| 129 | Rip.50IncRip_none | Ripping to 50cm and inclusion with no amendments |
| 130 | Rip.50IncRip_CI.surface | Ripping to 50cm and inclusion with chicken litter applied surface |
| 131 | Rip.50IncRip_CI@7.5.incorp_50 | Ripping to 50cm and inclusion with chicken litter incorporated 50cm |
| 132 | Rip.60_none | Ripping to 60cm with no amendments |
| 133 | Rip.60_CI.surface | Ripping to 60cm with chicken litter applied at surface |
| 134 | Rip.60_CI.band_60 | Ripping to 60cm with chicken litter banded 60cm |
| 135 | Rip.60_Lc.band_60 | Ripping to 60cm with lucerne banded 60cm |
| 136 | Rip.60_Fert.band_8 | Ripping to 60cm with fertiliser banded 8cm |
| 137 | Rip.60_Fert.band_60 | Ripping to 60cm with fertiliser banded 60cm |
| 138 | Rip.60Spade.30_none | Ripping to 30cm and spading 30cm with no amendments |
| 139 | Rip.60Spade.30_Lc.incorp_30+band_60 | Ripping to 60cm and spading 30cm with lucerne incorporated 30cm and banded 60cm |
| 140 | Rip.60IncRip_none | Ripping to 60cm and inclusion with no amendments |
| 141 | Rip.60IncRip+Spade.30_none | Ripping to 60cm and inclusion and spading 30cm with no amendments |
| 142 | Unmodified+DeepTill.18_none | deep tillage 18cm with no amendments |
| 143 | Unmodified+DeepTill.18_SE14.band_8 | deep tillage 18cm with SE14 (wetter) banded 8cm |