

Supplementary materials

Table S1 List of crop varieties included in training of the machine learning-based models.

Crop	Variety
Barley	Alestar, Bass, Baudin, Buloke, Commander, Compass, Explorer, Fathom, Fleet, Flinders, Gairdner, Granger, Hindmarsh, La Trobe, Maltstar, RGT Planet, Rosalind Schooner, Scope, Spartacus CL, Charger, Fairview, Flagship, Henley, Macquarie, Maritime, Oxford, Skipper, SY Rattler, Urambie, Vlamingh, Westminster, Wimmera, Hannan, Lockyer, Molloy, Mundah, Navigator, Roe, Keel, Sloop SA, Capstan, Finniss, Yarra, Barque, Shepherd, Sloop, Torrens, Grimmett, Grout, Mackay, Fitzroy, Litmus, Dash, Doolup, Hamelin, Stirling, Sloop VIC, Tulla, Binalong, Cowabbie, Tantangara, Kaputar, Skiff, Tallon, Yagan, Barleymax, Franklin, Quasar
Canola	ATR Cobbler, ATR Snapper, ATR Stingray, CB Argyle, CB Jardee HT, CB June HT, CB Mallee HT, CB Scaddan, CB Tanami, CB Tumby HT, Crusher TT, Fighter TT, Hyola 444TT, Hyola 555TT, Hyola 751TT, Monola 603TT, Monola 704TT, Monola 76TT, Monola 77TT, Tawriffic TT, Telfer, Thumper TT, CB Eclipse RR, GT Cougar, GT Mustang, GT Scorpion, GT Taipan, GT61, Hyola 404RR, Hyola 502RR, Hyola 505RR, Hyola 571C, Hyola 575CL, Hyola 606RR, Hyola 676CL, Pioneer 43Y85 (CL), Pioneer 44Y84 (CL), Pioneer 45Y21 (RR), Pioneer 45Y22 (RR), Pioneer 45Y82 (CL), Pioneer 45Y86 (CL), Pioneer 46Y20 (RR), Pioneer 46Y78, Pioneer 46Y83 (CL), Banker CL, Hyola 474CL, Pioneer 43Y92 (CL), Pioneer 44Y89 (CL), Pioneer 44Y90 (CL), Pioneer 45Y88 (CL), Pioneer 45Y91 (CL), IH30 RR, IH51 RR, Nuseed GT-42, Pioneer 43Y23 (RR), Pioneer 44Y24 (RR), Pioneer 44Y27 (RR), Pioneer 45Y25 (RR), ATR Bonito, Bayer 3000 TR, Hyola 450TT, Hyola 525RT, Hyola 559TT, InVigor T 4510, Monola 416TT, Pioneer, 44T02 TT, SF Turbine TT, AV Garnet, Nuseed Diamond, Victory V3002, DG 460RR, IH52 RR, Monola G11, Nuseed GT-50, Nuseed GT-53, VICTORY V5003RR, ATR Gem, ATR Mako, DG 560TT, DG 670TT, Monola 515TT, SF Ignite TT, Archer, Carbine, Pioneer 44Y87 (CL), CB Frontier RR, GT Cobra, GT Viper, IH50 RR, Monola 513GT, Nuseed GT-41, Victory V5002RR, ATR Wahoo, CB Henty HT, CB Nitro HT, Hyola 656TT, Jackpot TT, Monola 413TT, Monola 506TT, Monola 605TT, Pioneer Atomic TT, ATR Barr, BravoTT, Hurricane TT, Hyola 601RR, Lightning TT, Pioneer 44C79 (CL), Pioneer 45Y77, Rottnest TTC, Monola 707TT, Victory V5001RR, Bonanza TT, Pioneer 45T01TT, CB Agamax, Hyola 433, Hyola 50, Victory V3001, InVigor R 5520P, Hyola 650TT, Hyola 725RT, AV Zircon, Hyola 577CL, Rimfire CL, DG 550RR, Hyola 504RR, Hyola 600RR, Pioneer 44Y26 (RR), Monola 314TT, Hyola 500RR, VT 525 G, SaharaCL, SARDI515M, Tarcoola, Xceed Oasis CL, Hyola 350TT, ATR Marlin, ATR409, Flinders TTC, Monola 66TT, Storm TT, Thunder TT, Tornado TT, Hyola 76, Monola 130CC, Hyola 506RR, Hyola 400RR, Pioneer Sturt TT, CB Boomer, CB Tango C, Pioneer 43C80 (CL), Victory V3003, Hyola 635CC, CB Status RR, ATR Stubby, Pioneer 44C73, Pioneer 46Y81, Yetna, AG Muster, AV Sapphire, Rocket CL, Dune
Chickpea	Ambar, Genesis 079, Genesis 090, Genesis 509, Genesis 836, Howzat, Neelam, PBA Boundary, PBA HatTrick, PBA Maiden, PBA Seamer, PBA Slasher, PBA Striker, Flipper, Jimbour, Yorker, Almaz, Genesis 114, Genesis 425, Genesis, Kalkee PBA, Monarch, Sonali, Kyabra, Moti, PBA Pistol, Genesis 510, Rupali, Nafice
Faba bean	Farah, Fiesta VF, Nura, PBA Rana, PBA Samira, PBA Zahra, Doza, Fiord, PBA Nasma, PBA Warda, Aquadulce, Manafest, PBA Kareema, Cairo, Barkool
Field pea	Bundi, Excell, Kasper, Maki, Morgan, Parafield, PBA Gunyah, PBA Oura, PBA Pearl, PBA Percy, PBA Twilight, PBA Wharton, Sturt, SW Celine, Yarrum, CRC Walana, Helena, Dunwa
Lentil	Nipper, Nugget, PBA Ace, PBA Blitz, PBA Bolt, PBA Flash, PBA Hurricane XT, PBA Jumbo2, PBA Giant, PBA Greenfield, PBA Herald XT, PBA Jumbo, Boomer, Northfield, PBA Bounty, Aldinga, Digger, Matilda
Lupin	Coromup, Danja, Jenabillup, Mandelup, PBA Barlock, PBA Gunyidi, Quilinoock, Tanjil, Jindalee, PBA Jurien, Wonga, Kiev Mutant, Luxor, Rosetta, Ultra, Belara, Moonah, Amira, Andromeda
Oat	Bannister, Dunnart, Durack, Echidna, Mitika, Numbat, Possum, Potoroo, Williams, Wombat, Yallara, Euro, Mortlock, Carrolup, Kojonup, Wandering, Quoll, Yarran, Dalyup
Triticale	Berkshire, Bogong, Canobolas, Chopper, Crackerjack, Fusion, Hawkeye, Jaywick, Rufus, Tahara, Tobruk, Tuckerbox, Yowie, Yukuri, Kosciuszko, Tickit, Abacus, Astute, Bison, Endeavour, Goanna, Speedee, KM10, El Alamein, Treat, Cartwheel

Wheat	Axe, B53, Barham, Bolac, Bowie, Chara, Corack, Correll, Crusader, Dart, EGA Gregory, EGA Wylie, Ellison, Emu Rock, Espada, Estoc, Gauntlet, Gazelle, GBA Ruby, Gladius, Impala, Janz, Justica CL Plus, Kennedy, Kord CL Plus, Lang, Lincoln, Livingston, Magenta, Merinda, Merlin, Orion, Peake, Phantom, QAL2000, Sabel CL Plus, Spitfire, Sunguard, Suntop, Sunvale, Sunvex, Sunzell, Ventura, Waagan, Wallup, Yenda, Yitpi, AGT Katana, Beckom, Catalina, Cobra, DS Darwin, DS Newton, DS Pascal, Grenade, CL Plus Harper, Hatchet CL Plus, Mace, Scout, Shield, Trojan, Wyalkatchem, Beaufort, Cobalt, Condo, Coolah, Cutlass, Elmore CL Plus, Jade, LRPB Flanker, LRPB Reliant, QALBIS, Scepter, Steel, Strzelecki, Tenfour, Tungsten, Viking, Clearfield Jnz, EGA Bounty, Gascoigne, Lancer, Sunmate, Young, Baxter, Dakota, EGA Burke, EGA Stampede, EGA Wills, GBA Hunter, Giles, Hartog, Leichhardt, Rowan, Cosmick, Derrimut, DS Faraday, LRPB Arrow, Arrino, Binnu, Bullaring, Bumper, Calingiri, Carnamah, Cascades, Datatine, EGA Bonnie Rock, EGA Wentworth, Envoy, Fang, Fortune, Guardian, Impose CL Plus, King Rock, Kunjin, Preston, Sentinel, Tammarin Rock Westonia, Yandanooka, Zippy, Clearfield Stl, Frame, SQP Revenue, Forrest, Sunco, LRPB Kittyhawk, EGA Hume, Buchanan, Bullet, Krichauff, Kukri, Pugsley, Chief CL Plus, Impress CL Plus, Supreme, Zen, Wedin, Sunstate, Caparoi, EGA Bellaroi, Jandaroi, Wollaroi, Mackellar, Rudd, SF Ovalo, Bremer, Hydra, Ninja, Carinya, Drysdale, Hornet, Rosella, Annuello, Braewood, EGA Eaglehawk, GBA Sapphire, Sunlin, EGA Kidman, Mitch, RGT Accroc, SF Adagio, SF Scenario, Cunningham, Zebu, Zulu, Excalibur, EGA Wedgetail, Einstein, Kellala, Kiora, Manning, Naparoo, Sunlamb, Sunmax, AGT Scythe, Diamondbird, Gruner, H46, McCubbin, Snipe
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Table S2 List of soil types included in training of the machine learning-based models.

Crop	Soil type
Barley	Brown Sodosol, Clay, Shallow Loamy Duplex, Loamy Sand over Clay Loam, Black Clay, Clay Loam over Heavy Clay, Sandy Clay over Medium Clay, Loamy Fine Sand over Clay, Black Vertosol, Medium to Heavy Clay, Gravel, Sandy Clay Loam over Light Clay, Loam, Yellow Grey Loamy Earth Constrained, Loam over Clay Loam, Sandy Clay Loam, Calcareous Loam, Clay Loam, Grey Sodosol, Yellow Deep Sand, Grey Vertosol, Dark Grey Cracking Clay, Red Kandosol, Loamy Sand over Sandy Clay Loam on Rock, Loamy Sand over Sandy Loam on Clay, Sandy Clay over Light to Heavy Clay, Deep Sandy Duplex, Brown Deep Sand, Vertosol, Sand over Sodic Brown Clay, Grey Vertosol Cecilvale, Clay Loam over Sandy Clay, Clay Loam over Light to Heavy Clay, Acid Loamy Sand, Calcareous Loamy Earth, Sandy Loam over Sandy Clay Loam, Sandy Loam, Clayey Sand, Grey Calcareous Loamy Sand, Yellow Deep Sandy Duplex Constrained, Deep Sand over Clay, Clay Loam over Loamy Clay, Black Vertosol Radel, Aeris Podosol, Yellow Shallow Sandy Duplex Constrained, Grey Cracking Clay, Black Vertosol Waco, Red Cracking Clay, Ironstone, Grey Deep Sandy Duplex, Clay Loam over Clay over Calcete on Clay, Loamy Sand over Sandy Loam, Red Sandy Earth, Sandy Earth, Grey Shallow Sandy Duplex, Dune Loamy Sand, Loamy Duplex, Sand, Sandy Clay Loam over Clay Loam Medium Clay, Grey Calcareous Sandy Loam, Brown Vertosol, Loamy Sand, Deep Yellowish Brown Loamy Sand, Duplex Sandy Gravel, Deep Sand, Red Light Sandy Clay Loam, Black Vertosol Rolleston, Bleached Siliceous Sand, Hard Sandy Loam over Dispersive Red Clay, Red Deep Loamy Duplex, Red Chromosol, Vertosol Scrub, Acid Yellow Sandy Earth, Clayey Sand over Less Constrained Clay, Shallow Loam on Calcrete, Sandy Clay, Black Vertosol Bongeen
Canola	Loam over Clay, Red Chromosol, Sandy Clay Loam, Sandy Clay Loam over Medium Clay, Sandy Loam over Clay, Gravel, Sandy Loam over Sandy Clay Loam, Sandy Clay over Medium Clay, Sandy Loam over Brown Clay, Loamy Fine Sand over Clay, Clay Loam, Loam over Clay Loam, Yellow Deep Sand, Red Kandosol, Calcareous Loam, Sodosol, Grey Vertosol Plain, Loamy Sand over Sandy Clay Loam on Rock, Clay, Sandy Clay Loam over Clay Loam Medium Clay, Loamy Sand over Loamy Clay, Dark Brown Cracking Clay, Sandy Clay over Light to Heavy Clay, Yellow Sandy Earth, Dark Grey Cracking Clay, Silty Clay Loam over Medium Clay, Brown Deep Sand, Sand over Sodic Brown Clay, Yellow Grey Loamy Earth Constrained, Calcareous Loamy Earth, Deep Sandy Duplex, Brown Sodosol, Acid Loamy Sand, Deep Yellowish Brown Loamy Sand, Grey to Black Vertosol, Yellow Deep Sandy Duplex Constrained, Clay Loam over Clay over Calcete on Clay, Ironstone, Sandy Duplex Sand over Light Clay, Sandy Clay Loam over Heavy Clay, Sandy Clay Loam over Clay, Sand, Aeris Podosol, Loamy Sand over Sandy Loam, Sandy Earth, Shallow Loamy Duplex, Heavy Red Kandosol, Loamy Duplex, Black Vertosol, Red Sandy Loam over Clay, Grey Cracking Clay, Yellow Brown Shallow Sandy Duplex, Grey Deep Sandy Duplex, Sandy Loam over Sandy Clay, Red Clay, Yellow Shallow Sandy Duplex Constrained, Duplex Sandy Gravel, Loamy Duplex, Red Light Sandy Clay Loam, Grey Shallow Sandy Duplex, Loamy Sand, Sandy Loam over Sandy Clay and Heavy Clay, Shallow Loam on Calcrete, Grey Vertosol, Brown Loamy Earth, Shallow Sandy Loam over Calcrete, Sandy Loam over Heavy Clay over Sandy Clay Loam

Chickpea	Sandy Loam over Sandy Clay Loam, Grey Vertosol Plain, Brown Vertosol Talgai Shallow Phase, Black Vertosol, Vertosol, Grey Vertosol, Calcareous Loam, Sandy Clay Loam, Dark Brown Cracking Clay, Grey Sodosol, Grey Cracking Clay, Clay Loam, Clay Loam over Heavy Clay, Grey Black Vertosol, Dark Grey Cracking Clay, Loam over Clay Loam over Clay, Clay Loam over Loamy Medium Clay, Sandy Loam over Brown Clay, Grey Vertosol Cecilvale, Grey Vertosol Brigalow, Loamy Sand over Loamy Clay, Gradational Calcareous Clay Loam, Clay Loam over Clay over Calcete on Clay Red Clay, Aeris Podosol, Grey Vertosol Kupunn, Clay, Loamy Sand, Brown Vertosol, Red Sandy Earth, Grey Shallow Sandy Duplex, Red Brown non Cracking Clay, Acid Loamy Sand, Sandy Clay over Light to Heavy Clay, Shallow Sandy Duplex, Black Vertosol Orion, Duplex Sandy Gravel, Red Loam, Loam over Clay, Clay Loam over Light to Heavy Clay, Vertosol Scrub, Deep Loamy Duplex, Yellow Deep Sand, Sandy Loam, Black Vertosol Waco
Faba bean	Rubbly Calcareous Clay Loam, Grey Cracking Clay, Sandy Loam over Brown Clay, Grey Vertosol, Sandy Loam over Sandy Clay Loam, Clay Loam over Heavy Clay, Highly Leached Sand, Loamy Sand over Sandy Loam, Clay Loam, Dark Grey Medium Clay, Clay Loam over Loamy Medium Clay, Grey Vertosol Plain, Brown Sodosol, Grey Sodosol, Red Chromosol, Vertosol, Black Vertosol, Sandy Clay over Light to Heavy Clay, Dark Grey Cracking Clay, Dark Brown Cracking Clay, Sand over Sodic Brown Clay, Loam over Clay Loam over Clay, Sandy Loam, Sandy Loam over Medium Clay over Rock, Clay, Loam over Clay, Clay Loam over Clay over Calcete on Clay Calcareous Loam, Red Kandosol, Loamy Earth, Grey to Black Vertosol, Brown Chromosol, Red Sandy Loam over Clay, Sandy Loam over Sandy Clay
Field pea	Sandy Loam, Sodosol, Sandy Clay Loam over Light Clay, Red Chromosol, Loamy Sand over Sandy Loam, Sandy Clay Loam, Dark Brown Cracking Clay, Clay Loam, Medium to Heavy Clay, Dark Grey Cracking Clay, Sandy Loam over Brown Clay, Red Kandosol, Clay Loam over Medium to Heavy Clay, Sandy Loam over Sandy Clay Loam, Calcareous Loam, Loamy Sand over Loamy Clay, Aeris Podosol, Clay Loam over Clay over Calcete on Clay, Sand over Sodic Brown Clay, Sandy Clay over Medium Clay, Loamy Earth, Grey Cracking Clay, Loam over Clay Loam over Clay, Red Clay, Loamy Sand, Yellow Shallow Sandy Duplex Constrained, Red Light Sandy Clay Loam, Shallow Sandy Duplex, Sodosol, Sand, Acid Loamy Sand, Gravelly Pale Deep Sand, Duplex Sandy Gravel, Clay Loam over Heavy Clay, Shallow Loamy Duplex, Loam over Clay, Yellow Deep Sand, Alkaline Shallow Sandy Duplex, Alkaline Grey Shallow Loamy Duplex
Lentil	Rubbly Calcareous Clay Loam, Red Kandosol, Sandy Loam over Sandy Clay Loam, Clay Loam over Medium to Heavy Clay, Clay, Loamy Sand over Sandy Loam, Sandy Clay Loam, Grey Sodosol, Dark Brown Cracking Clay, Clay Loam, Grey Cracking Clay, Calcareous Loam Clay, Loamy Sand over Loamy Clay, Sandy Loam, Aeris Podosol, Gradational Calcareous Clay Loam, Clay Loam over Clay over Calcete on Clay Calcareous Loam, Sand, Dark Grey Cracking Clay, Loam over Clay Loam over Clay, Red Clay, Loamy Sand, Loam over Clay, Alkaline Shallow Sandy Duplex, Alkaline Clay, Duplex Sandy Gravel
Lupin	Deep Sandy Duplex, Sandy Loam over Brown Clay, Sandy Clay over Medium Clay Gravel, Sodosol, Sandy Clay Loam over Light to Medium Clay, Dark Grey Cracking Clay, Clay Loam over Medium Clay, Deep Sand, Clay Loam, Sand over Sodic Brown Clay, Sandy Loam over Sandy Clay Loam, Red Chromosol, Deep Yellowish Brown Loamy Sand, Sandy Clay Loam over Clay Loam Medium Clay Brown Deep Sand, Clay Loam over Medium Clay, Heavy Red Kandosol, Sandy Loam, Yellow Shallow Sandy Duplex Constrained, Loamy Sand over Clay Loam, Acid Loamy Sand, Loam over Clay Loam, Sandy Clay Loam over Light Clay, Podosol, Yellow Deep Sandy Duplex Constrained, Red Kandosol, Sandy Earth, Sandy Loam over Sandy Clay, Shallow Loamy Duplex, Loamy Sand over Sandy Loam, Red Sandy Earth, Dune Loamy Sand, Loamy Fine Sand over Clay, Shallow Sandy Duplex, Shallow Rubbly Calcareous Sandy Loam, Red Deep Loamy Duplex, Gravelly Pale Deep Sand, Grey Deep Sandy Duplex, Duplex Sandy Gravel, Yellow Sandy Earth, Deep Loamy Duplex, Loamy Sand, Red Clay, Sandy Clay Loam over Medium Clay, Brown Sodosol
Oat	Loamy Sand over Clay Loam, Grave, Loam over Clay, Sandy Loam over Clay, Deep Sandy Duplex, Sandy Loam over Brown Clay, Brown Sodosol, Clay Loam, Sandy Clay over Medium Clay, Loam, Sandy Clay Loam over Light Clay, Medium to Heavy Clay, Fine Sandy Loam over Light Clay, Loamy Fine Sand over Clay, Red Chromosol, Grey Sodosol, Yellow Deep Sand, Dark Grey Cracking Clay, Calcareous Loam, Heavy Red Kandosol, Brown Cracking Clay, Clay, Gradational Calcareous Clay Loam, Loam over Clay Loam over Clay, Acid Loamy Sand, Clay Loam over Heavy Clay, Brown Deep Sand, Yellow Deep Sandy Duplex Constrained, Earth, Red Cracking Clay, Sandy Clay Loam over Clay, Brown Chromosol, Sandy Clay Loam over Clay Loam Medium Clay Grey Deep Sandy Duplex, Grey Shallow Sandy Duplex, Red Light Sandy Clay Loam, Sandy Gravel, Loamy Duplex, Sandy Loam over Sandy Clay Loam, Grey Calcareous Sandy Loam, Light Loamy Sand, Shallow Loamy Duplex, Sandy Clay over Clay, Yellow Shallow Sandy Duplex Constrained
Triticale	Brown Sodosol, Loamy Sand over Clay Loam, Clayey Sand, Sandy Loam over Brown Clay, Brown Chromosol, Sandy Loam over Clay, Sandy Clay Loam over Light Clay, Grey Black Vertosol, Calcareous Loam, Black Vertosol, Sandy Clay Loam, Red Kandosol, Sandy Clay Loam over Clay Loam Medium Clay Red Chromosol, Sandy Clay Loam over Sandy to Light Clay Heavy Red Kandosol, Ironstone, Sandy Loam, Deep Sand over Clay, Loamy Sand over Sandy Loam on Clay, Grey Calcareous Sandy Loam, Sandy Clay Loam over Clay, Red Light Sandy Clay Loam, Sandy Clay over Clay, Dune Loamy Sand, Sandy Clay

Wheat	<p>Medium to Heavy Clay, Sandy Loam over Brown Clay, Sandy Loam over Sandy Clay Loam, Red Kandosol, Grey Vertosol Cecilvale, Loam over Clay, Gravel, Loam, Red Chromosol, Sandy Clay Loam over Medium Clay, Sandy Loam over Clay, Black Vertosol, Clay Loam over Heavy Clay, Loamy Sand over Clay Loam, Sandy Clay over Medium Clay, Sandy Clay over Clay, Loamy Fine Sand over Clay, Sandy Clay Loam over Light Clay, Dark Grey Medium Clay, Yellow Grey Loamy Earth Constrained, Grey Black Vertosol, Clay Loam, Sandy Clay Loam, Deep Sandy Duplex, Clay Loam, Vertosol Scrub, Grey Vertosol Kupunn, Clay Loam over Medium Clay, Vertosol, Calcareous Loam, Grey Sodosol, Sandy Clay over Light to Heavy Clay, Yellow Deep Sand, Grey Vertosol, Grey Vertosol Plain, Sandy Clay Loam over Sandy Clay, Deep Yellowish Brown Loamy Sand, Brown Deep Sand, Thin Sand over Clay on Calcrete, Loam over Clay Loam, Silty Clay Loam over Medium Clay, Sand over Sodic Brown Clay, Loamy Sand over Sandy Loam over Sandy Clay Loam Gradational Calcareous Clay Loam, Clay, Calcareous Loamy Earth, Grey Shallow Sandy Duplex, Acid Loamy Sand, Sandy Clay Loam over Clay Loam Medium Clay, Calcareous Sandy Loam, Shallow Loamy Duplex, Sandy Loam, Grey Deep Sandy Duplex, Sandy Earth, Brown Sodosol, Yellow Deep Sandy Duplex Constrained, Black Vertosol Orion, Deep Sand, Clay Loam over Loamy Clay, Black Vertosol Radel, Aeris Podosol, Bleached Siliceous Sand, Sand, Yellow Shallow Sandy Duplex Constrained, Grey Cracking Clay, Black Vertosol Waco, Grey Calcareous Sandy Loam, Loamy Earth, Sandy Clay Loam over Clay, Gradational Calcareous Clay Loam, Grey Vertosol, Brown Vertosol, Loamy Duplex, Acid Yellow Sandy Earth, Red Sandy Earth, Grey Calcareous Loamy Sand, Loam over Dispersive Red Clay Kimba, Yellow Brown Shallow Sandy Duplex, Duplex Sandy Gravel, Red Loam Red Clay, Alkaline Clay, Red Light Sandy Clay Loam, Black Vertosol Rolleston, Loamy Sand, Dune Loamy Sand, Deep Loamy Duplex, Calcareous Sandy Loam over Clay, Shallow Sandy Duplex, Highly Calcareous Sandy Loam Wookata, Hard Sandy Loam over Dispersive Red Clay, Grey Vertosol Kupunn Mod for Salt, Clayey Sand over Less Constrained Clay, Shallow Loam on Calcrete, Brown Chromosol, Sandy Duplex Sand over Light Clay, Black Vertosol Bongeene</p>
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