

| Test Results | Suggested Management Practices | | NH NRCS Practice (code) |
|-------------------------------------|--|---|---|
| | Short Term | Long Term | |
| Physical Concerns | | | |
| Low Aggregate stability | <ul style="list-style-type: none"> Incorporate fresh organic materials Use shallow-rooted cover/rotation crops Add manure, green manure, mulch | <ul style="list-style-type: none"> Reduce tillage Use a surface mulch Rotate with sod crops | (328) Conservation Crop Rotation; (340) <u>COVER CROP</u> ; (329) Residue Mgmt No-Till/Strip-Till; (484) Mulching; (512) Forage & Biomass Planting; (528) Prescribed Grazing |
| Low Available Water Capacity | <ul style="list-style-type: none"> Add stable organic materials, mulch Add compost or biochar Incorporate high biomass cover crop | <ul style="list-style-type: none"> Reduce tillage Rotate with sod crops Incorporate high biomass cover crop | (328) Conservation Crop Rotation; (329) Residue Mgmt No-Till/Strip-Till; (317) Compost Facility; (340) <u>COVER CROP</u> ; (484) Mulching; (512) Forage & Biomass Planting; (528) Presc. Grazing |
| High Surface Hardness | <ul style="list-style-type: none"> Perform some mechanical soil loosening (strip till, aerators, broadfork, spader) Use shallow-rooted cover crops Use a living mulch or interseed cover crop | <ul style="list-style-type: none"> Shallow-rooted cover/rotation crops Avoid traffic on wet soils, monitor Avoid excessive traffic/tillage/loads Use controlled traffic patterns/lanes | (328) Conservation Crop Rotation; (345) Residue Mgmt, Mulch Till; (340) <u>COVER CROP</u> ; (484) Mulching; (528) Prescribed Grazing (512) Forage & Biomass Planting (548) Grazing Land Mechanical Trt; |
| High Subsurface Hardness | <ul style="list-style-type: none"> Use targeted deep tillage (subsoiler, yeomans plow, chisel plow, spader.) Plant deep rooted cover crops/radish | <ul style="list-style-type: none"> Avoid plows/disks that create pans Avoid heavy loads Reduce traffic when subsoil is wet | (324) Deep Tillage; (329) Residue Mgmt, No-/Strip-Till; (345) Residue Mgmt, Mulch Till (340) <u>COVER CROP</u> ; (548) Grazing Land Mechanical Trt; (606) Subsurface Drain |
| Biological Concerns | | | |
| Low Organic Matter | <ul style="list-style-type: none"> Add stable organic materials, mulch Add compost and biochar Incorporate high biomass cover crop | <ul style="list-style-type: none"> Reduce tillage/mechanical cultivation Rotate with sod crop Incorporate high biomass cover crop | (328) Conservation Crop Rotation; (340) <u>COVER CROP</u> ; (329) Residue Mgmt No-Till/Strip-Till; (317) Compost Facility; (484) Mulching; (528) Prescribed Grazing (512) Forage & Biomass Planting; |
| Low Active Carbon | <ul style="list-style-type: none"> Add fresh organic materials Use shallow-rooted cover/rotation crops Add manure, green manure, mulch | <ul style="list-style-type: none"> Reduce tillage/mechanical cultivation Rotate with sod crop Cover crop whenever possible | (328) Conservation Crop Rotation; (329) Residue Mgmt, No-Till; (340) <u>COVER CROP</u> ; (345) Residue Mgmt, Mulch Till; (484) Mulching; (528) Presc. Grazing; (511) Forage Harvest Management; (512) Forage & Biomass Planting |
| Low Mineralizable Nitrogen | <ul style="list-style-type: none"> Add N-rich organic matter (low C:N source like manure, high N well-finished compost) Incorporate legume or young, green cover crop (inoculate legume seed) Adjust pH to 6.2-6.5 (helps molybdenum) | <ul style="list-style-type: none"> Reduce tillage Rotate with forage legume sod crop Cover crop and add fresh manure Keep pH at 6.2-6.5 (helps molybdenum) Monitor C:N ratio of inputs | (328) Conservation Crop Rotation; (329) Residue Mgmt No-Till/Strip-Till; (317) Compost Facility; (340) <u>COVER CROP</u> ; (512) Forage & Biomass Planting; (528) Prescribed Grazing ; (590) Nutrient Mgmt |
| High Root Rot Rating | <ul style="list-style-type: none"> Use disease-suppressive cover crops Biofumigate Plant on ridges/raised beds Monitor irrigation | <ul style="list-style-type: none"> Use disease-suppressive cover crops Increase diversity of crop rotation Sterilize seed and equipment Improve drainage/monitor irrigation | (328) Conservation Crop Rotation; (346) Residue Mgmt, Ridge Till; (340) <u>COVER CROP</u> ; (449) Irrigation Water Mgmt; (595) Integrated Pest Mgmt; (606) Subsurface Drain |

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|----------------------------------|---|---|---|
| | Short Term | Long Term | |
| Chemical Concerns | | | |
| Low pH | <ul style="list-style-type: none"> Add lime or wood ash per soil test recs Add calcium sulfate (gypsum) in addition to lime if aluminum is high Use less ammonium or urea | <ul style="list-style-type: none"> Test soil annually & add “maintenance” lime per soil test recs to keep pH in range Raise organic matter to improve buffering capacity | (340) COVER CROP; (512) Forage & Biomass Planting; (590) Nutrient Mgmt |
| High pH | <ul style="list-style-type: none"> Stop adding lime or wood ash Add elemental sulfur per soil test recs | <ul style="list-style-type: none"> Test soil annually Use higher % ammonium or urea | (590) Nutrient Mgmt |
| Low Phosphorus | <ul style="list-style-type: none"> Add P amendments per soil test recs Use cover crops to recycle fixed P Adjust pH to 6.2-6.5 to free up fixed P | <ul style="list-style-type: none"> Promote mycorrhizal populations Maintain a pH of 6.2-6.5 Use cover crops to recycle fixed P | (340) COVER CROP; (590) Nutrient Mgmt |
| High Phosphorus | <ul style="list-style-type: none"> Stop adding manure and compost Choose low or no-P fertilizer blend Apply only 20 lbs/ac starter P if needed Apply P at or below crop removal rates | <ul style="list-style-type: none"> Use cover crops that accumulate P and export to low P fields or offsite Consider low P rations for livestock Consider phytase for non-ruminants | (340) Cover Crop; (393) Filter Strip; (484) Mulching; (590) Nutrient Mgmt; (633) Waste Recycling |
| Low Potassium | <ul style="list-style-type: none"> Add wood ash, fertilizer, manure, or compost per soil test recs Use cover crops to recycle K Choose a high K fertilizer blend | <ul style="list-style-type: none"> Use cover crops to recycle K Add “maintenance” K per soil recs each year to keep K consistently available | (340) COVER CROP; (590) Nutrient Mgmt |
| High Potassium | <ul style="list-style-type: none"> Stop adding high K fertilizer or manure Grow high K removing crops | <ul style="list-style-type: none"> Use cover crops to accumulate K and export to low K fields or offsite | (340) COVER CROP; (590) Nutrient Mgmt |
| Low Micronutrients | <ul style="list-style-type: none"> Add chelated micros per soil test recs Use cover crops to recycle micronutrients Do not exceed pH 6.5 for most crops | <ul style="list-style-type: none"> Promote mycorrhizal populations Improve organic matter Decrease soil P (binds micros) | (340) COVER CROP; (590) Nutrient Mgmt; (633) Waste Recycling |
| High Micronutrients | <ul style="list-style-type: none"> Raise pH to 6.2-6.5 (for all high micros except Molybdenum) Do not use fertilizers with micronutrients | <ul style="list-style-type: none"> Maintain a pH of 6.2-6.5 Monitor irrigation/improve drainage Improve soil calcium levels | (449) Irrigation Water Mgmt; (512) Forage & Biomass Planting; (590) Nutrient Mgmt; (606) Subsurface Drain |
| High Salinity¹ | <ul style="list-style-type: none"> Leach soils Use fertilizers with a low salt index (avoid chlorine and ammonium/urea fertilizers) Do not use Chilean nitrate | <ul style="list-style-type: none"> Test compost for soluble salts Use electroconductivity meter to monitor salts in the soil and irrigation water Improve drainage | (449) Irrigation Water Mgmt; (512) Forage & Biomass Planting; (590) Nutrient Mgmt; (606) Subsurface Drain |

¹Cornell Soil Health results do not report salinity (soluble salts) unless requested. Salinity is primarily an issue for soils in high tunnels. Consider testing soluble salts through UNH using the High Tunnel test. Job sheet adapted from the Cornell Soil Health Manual <http://soilhealth.cals.cornell.edu/extension/manual.htm> by Brandon Smith, NH NRCS State Agronomist (brandon.smith@nh.usda.gov or 603-868-9931).