6-3-4™

VERIFICATION STANDARD

FOR REGENERATIVE AGRICULTURE

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WWW.REGENIFIED.COM/6-3-4-VERIFICATION-STANDARD

This 6-3-4™ Verification Standard from Regenified™ reflects decades of on-farm and in-lab research on regenerative agricultural practices. This document represents a way for an entire system (food/fiber/fuel companies, farmers, ranchers, and consumers) to make better decisions about what to grow and eat. Our Standard is designed to move entire supply chains toward regenerative agriculture, yielding improved climate effects for our planet and positive health benefits for the people on it.

Regenified's 6-3-4™ Verification Standard is based on six principles, three rules, and four processes. It helps farmers and ranchers understand where their practices and lands are at on the regenerative path. Financial incentives are also essential to help align human behavior with the needs of the planet. These incentives and the contracts, licenses, and agreements that support such transformation are not addressed in this verification standard.

An online version of this document is at: www.Regenified.com/6-3-4-Verification-Standard.

Additional Resources

Accredited Educational Program: Soil Health Academy | Grow Healthier Soil, Food and Profits.

Learn more about Regenified™ the company here: www.Regenified.com/Company.

What's Inside

1.0 **Ranking Tiers** allow easy entry at multiple levels while requiring improvement over time.
2.0 **Farm/Ranch Plan Requirements** move producers logically along the regenerative path.
3.0 **Farm/Ranch Field Evaluation and Lab Testing Standard** ensures regenerative practices are being used and positive outcomes are occurring on the land.
4.0 **Verification Review Board and Field Verifier Duties** show who is responsible for what.
5.0 **Soil Testing Protocol** explains testing location technical procedures.

Questions

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1. Requirements for the Regenified Ranking Tiers

1.1. Five Tiers of Ranking

1.1.1. The verification standard begins with an initial evaluation. A farming or ranching operation could be qualified to be placed in any tier, depending on their current application of regenerative practices.

1.1.2. An operation can move up the tiers as fast as they want as long as they meet the acreage criteria for the tier to which they are moving.

1.1.3. No more than 3 years are allowed in any single tier.

1.1.4. After 3 years, a farm/ranch must have made enough regenerative changes on enough acres of their operation to be eligible for the next higher tier or they will be dropped from Regenified qualification status.

1.2. Tier 1

1.2.1. Baseline evaluation and testing must be completed on all acres submitted for verification.

1.2.2. Completion of the full verification standard, including all soil testing, must be done as part of this initial evaluation.

1.2.3. If not already in place, then producers must begin developing a written plan for the application of regenerative practices.

1.2.4. Producers must attend a 3-day regenerative agriculture educational workshop.

1.2.5. A list of approved courses will be maintained by Regenified™.

1.2.6. If a course is not on the approved list, then a producer can submit it to the Verification Review Board for approval prior to attending.

1.3. Tier 2

1.3.1. Regenerative practices must be applied on a portion of the farm or ranch with some documented soil/environmental improvements occurring.

1.3.2. The farm/ranch written plan must be in place.

1.3.3. The farm/ranch written plan must include logical management steps and practices which address the 6 Principles of Soil Health and 3 Rules of Adaptive Stewardship.

1.3.4. The farm/ranch written plan must be approved by the Regenified Review Board.

1.3.5. When they are qualified for Tier 2, they may use the Regenified™ seal.

1.4. Tier 3

1.4.1. Regenerative practices that address the soil health principles and ecosystem processes must be fully applied to 40-60% of the ag land base.

1.4.2. Livestock operations must have 40-60% of annual feed inputs, including purchased, produced regeneratively.

1.4.3. Current years evaluation scores and soil tests should be higher than previous scores.

1.5. Tier 4

1.5.1. Regenerative practices that address the soil health principles and ecosystem processes must be fully applied to 60-80% of the ag land base.

1.5.2. Livestock operations must have 60-80% of annual feed inputs, including purchased, produced regeneratively.

1.5.3. Current years evaluation scores and soil tests must be higher than scores and test results from the previous tier.

1.6. Tier 5

1.6.1. Regenerative practices that address the soil health principles and ecosystem processes must be fully applied to 80-100% of the ag land base.

1.6.2. Livestock operations must have 80-100% of annual feed inputs, including those purchased, produced regeneratively.

1.6.3. Current years evaluation scores and soil tests must be higher than scores and test results from the previous tier.

2. Regenified Farm/Ranch Plan Requirements

2.1. Farm/Ranch Written Plan

2.1.1. The plan will consist of a logical step by step process to implement practices which address each of the 6 Soil Health Principles and the 3 Rules of Adaptive Stewardship.

2.1.2. The layout and format of this plan is up to each individual operation. It can be electronic or printed, but it must include corresponding maps or aerial photography. At a minimum, for each of the principles and rules the plan should include the following:

2.2. Context

2.2.1. List the primary resource concerns (erosion, water quality, wildlife etc.) for the operation.

2.2.2. List the ecological context of the operation. Forage types (cool, warm, introduced, native), growing season, calving season, strengths, and weaknesses.

2.2.3. List the long-term business goals and objectives of the operation.

2.3. Disturbance

2.3.1. Develop a plan to reduce or mitigate the major physical disturbances: tillage, grazing, or haying.

2.3.2. Develop a plan to reduce or mitigate possible disturbances to the soil chemistry such as pesticides, fertilizer, or manure.

2.3.3. List the long-term goal of the farm/ranch for this principle.

2.4. Armor

2.4.1. List of practices that could potentially remove armor from the soil (grazing, haying, tillage, chemical burndowns, etc.).

2.4.2. List management strategies that will be employed to ensure the soil has adequate armor.

2.4.3. List the long-term goal of the farm/ranch for this principle.

2.5. Diversity

2.5.1. Grassland - Provide an adaptive grazing plan that includes plans to maintain or increase plant diversity.

2.5.2. Cropland – Develop a cash crop planned rotation and cover crops needed to insure adequate plant diversity.

2.5.3. List the long-term goal of the farm/ranch for this principle.

2.6. Living Root

2.6.1. Grassland - Provide an adaptive grazing plan that includes management strategies to optimize plant height and leaf area and volume both of which corresponds to root growth.

2.6.2. Cropland - Provide cover crop planting times, mixtures and strategies for integrating into the cash crop rotation.

2.6.3. List the long-term goal of the farm/ranch for this principle.

2.7. Livestock Integration

2.7.1. Develop an adaptive grazing plan that incorporates the rest periods, grazing periods, and stock density on the grassland and how they will be integrated into the cropping operation, if applicable.

2.7.2. Provide the number and type of planned livestock and annual forage estimates for proper stocking rate determination.

2.7.3. List the long-term goals of the farm/ranch for this principle.

2.8. Rule of Compounding

2.8.1. Outline potential positive compounding effects of the farm/ranch's regenerative plan.

2.8.2. Outline potential negative compounding effects of the farm/ranch's regenerative plan.

2.9. Rule of Diversity

2.9.1. List practices that will be done to incorporate diversity in all phases of the operation including grassland and cropland.

2.10. Rule of Disruption

2.10.1. As part of adaptive grazing plan, include planned disruptions.

2.10.2. As part of the cropping rotation, include planned disruptions.

3. Regenified Farm/Ranch Field Evaluation and Lab Testing Standards

These Standards address the **Six Principles of Soil Health** including the **Three Rules of Adaptive Stewardship** and the **Four Ecosystem Processes.**

3.1. Context

On Farm Evaluation for All Land Uses

3.1.1. Farm/ranch must have written goals and objectives as well as a regenerative farming plan.

3.1.2. Farm or ranch production yield goals should be correct for their environment.

3.1.3. Plant and animal species and practices being used should be correct for their environment.

3.1.4. Birthing periods should be correct for the context of the area and operation.

3.1.5. Farm/ranch should be evaluated for and addressing the root cause of problems/resource concerns on the land.
3.1.6. Farm/ranch should participate in regenerative ag educational groups.
3.1.7. Farm/ranch should have a succession plan in place.

3.2. Disturbance

On Farm Evaluation for All Annually Planted Crops

3.2.1. There must be a reduction in tillage passes from previous verifications for Tiers 2-3 and score must be 50 or higher for Tier 4-5. Tillage passes include all full width and row cultivation, in addition to planting. For a multiple year rotation without tillage followed by an occasional tillage pass, divide tillage passes by the years in the rotation for a percentage listed in parenthesis in the table below.

Score	Tillage Passes
0	Multiple tillage passes annually
25	Only 1 tillage pass annually
50	1 tillage pass every 2-4 yrs. (.25-.5)
75	1 tillage pass every 5 yrs. or longer (0-.2)
100	Zero tillage passes

3.2.2. Injected fertility should be applied with a low disturbance applicator. If a high disturbance applicator is used, it also counts as a tillage pass. For Tier 4-5 a low disturbance applicator must be used.
3.2.3. There should be a reduction in pesticide rate or number of applications from previous verifications for Tier 2-3. There must be a reduction in pesticide rate and/or number of applications from the initial verification to the most recent verification for Tiers 4-5.

Grassland (introduced pasture or rangeland)

3.2.4. The recovery period should be long enough to ensure full recovery on most perennial plants in the grazing area.
3.2.5. The grazing period should be short enough to prevent most second bite opportunities during the grazing period.
3.2.6. The length of the average grazing period should be shorter than in previous evaluations.
3.2.7. Hay acres should be rotated annually.
3.2.8. Hay should be fed where it was harvested.
3.2.9. For Tier 2-3, hay should not be sold or exported from the farm.
3.2.10. For Tier 4-5, hay must not be sold or exported from the farm.
3.2.11. There should be a reduction in hay acres from previous evaluations.
3.2.12. There should be a reduction in rate or applications of pesticides from previous evaluations.

3.3. Armor

On Farm Evaluation for Cropland and Grassland

3.3.1. Percent Ground Cover in Tiers 2-3 must score 50 or higher. Tier 4-5 must score 75. For long periods with cover followed by occasional low cover, divide the sum of cover for each year by the years in the rotation for a percentage to be used below.

Less Brittle Areas: 25 inches of rainfall and up.

Score	% Cover
0	0 - 30
25	30 - 50
50	50 - 70
75	70 - 90
100	90 - 100

More Brittle Areas: 15 inches of precipitation.

Score	% Cover
0	0 - 20
25	20 - 30
50	30 - 50
75	50 - 70
100	70 - 100

Extremely Brittle Areas: Less than 15 inches of precipitation.

Score	% Cover
0	0 - 10
25	10 - 20
50	20 - 30
75	30 - 50
100	50 - 75

3.3.2. Bare soil conditions created by crop harvest that require digging (potatoes, beets, etc.) or land preparation/repair/leveling must be established to crop, cover crop, or mulch within 2 weeks.

3.4. Diversity

On Farm Evaluation

3.4.1. Cropland **-** 3 functional groups (warm, cool, grass, broadleaf, legume) must be present in the entire rotation in the form of cash crops, cover crops and/or annual forages. A diverse variable crop/cover crop rotation should be used in Tier 2-3, but it must be used in Tier 4-5.

3.4.2. **Grassland –** 3 functional groups (warm, cool, grass, broadleaf, legume) must be present in the grassland field.

3.4.3. A variety of stock densities and rest periods should be used to create disruptions and an increase in diversity.

3.5. Living Root
On Farm Evaluation

3.5.1. Days of the year an active living root from cash crop, cover crops or pasture is present. Total days possible includes 30 days prior to last spring frost to 30 days after first fall frost.
Divide days with a living root by total possible days.
Tier 2-3 should score 50 and Tier 4-5 must score a minimum of 75.

Score	Days of Year
0	0 – 30%
25	30 – 50%
50	50 – 70%
75	70 – 90%
100	90 – 100%

3.5.2. Crop Rotation, including cover crops, must reduce fallow periods or periods without living roots in the system to less than 10 percent of the available growing season within the rotation. Available growing season is considered to be from 30 days prior to last spring frost to 30 days after first fall frost.

3.5.3. Rhizosheaths: roots should be covered in a soil film indicating the presence of beneficial soil biology colonization.

3.5.4. Healthy roots should be abundant, well branched, and not inhibited by restrictive layers.

3.6. Livestock Integration
On Farm Evaluation

3.6.1. Livestock integration should be increasing as a percent of the total farm/ranch. Producers are exempt from these criteria in years when vegetable crops are planted that have legally mandated livestock withdrawal periods

Score	Acres
0	0
25	0 – 25%
50	25 – 50%
75	50 – 75%
100	75 – 100%

3.6.2. Livestock must have access to adequate space to move about and have access to feed and water on a continual basis.

3.6.3. Livestock must be grazed according to an adaptive grazing plan.

3.6.4. Body condition scores of the livestock must be appropriate for the time of year.

3.6.5. Antibiotics and/or hormone treatments must not be used in any animals prophylactically for pathogens, or as growth stimulants.

Four Ecosystem Processes

3.7. Water Cycle

On Farm Evaluation

3.7.1. Dry Aggregate Stability - Jornada Soil Stability Test. Score should be 50.

Score	Stability Class
0	1-2
25	2-3
50	3-4
75	4-5
100	5-6

3.7.2. Infiltration assessment - unsaturated hydraulic conductivity. Single Ring Infiltrometer or Mini Disk Infiltrometer will be used annually. Infiltration rate should be increasing every year.

Score	Infiltration Rate
0	1 inch in 30 minutes or more
25	1 inch in 10-30 minutes
50	1 inch in 5-10 minutes
75	1 inch in 1-5 minutes
100	1 inch in less than 1 minute

3.7.3. Infiltration assessment - saturated hydraulic conductivity. The Dual Head Infiltrometer will be used initially and then only every three years. Infiltration rate should be increasing every 3 years.

3.7.4. Compactions layers - Penetrometer or shovel. Soil should be free of tillage compaction layers and/or management induced platy structure restricting roots.

3.7.5. There must not be visible erosion or sedimentation in the field.

3.7.6. There should be no visible evidence of runoff or ponding.

Lab Testing

3.7.7. Water Holding Capacity
Test results should be higher than previous evaluations.

3.7.8. Wet Aggregate Test
Test results should be higher than previous evaluations.

3.8. Mineral Cycle

On Farm Evaluation

3.8.1. Purchased or farm produced N, P & K fertilizers (commercial, manure) can be applied but they must be applied at crop removal rates or less.

3.8.2. There should be a reduction in nutrient application rates from previous evaluations.

3.8.3. Nitrogen loss is minimized- Nitrate test strips used in edge of field water (tile, ditches, streams local to the operation). Nitrate should be below 10 ppm.

3.8.4. Odor of the soil -Score should be improving for tier 2-3. Score should be 75 or

Score	Smell
0	No odor at all or sour, metallic, rotten egg, stagnant
25	Little odor at all
75	Earthy/Sweet odor, noticeable when close to the nose
100	Earthy/Sweet odor noticeable > 6 inches from nose.

3.8.5. Phosphorus application should be at or below crop removal rates, or no application needed.

Lab Testing

3.8.6. Carbon - Loss on Ignition (LOI) included with Haney. Carbon must be on an upward trend.

3.8.7. Water Extractable Organic Nitrogen (WEON) - included with Haney test. WEON should be on an upward trend.

3.9. Energy Flow

On Farm Evaluation

3.9.1. Solar capture through plant canopy measurement. Percent living plant cover in Tiers 2-3 must score 50 or higher. Tier 4-5 must score 75.

Less Brittle Areas – 25 inches of rainfall and up

Score	Living Plant Cover
0	0 – 30%
25	30 – 50%
50	50 – 70%
75	70 – 90%
100	90 – 100%

More Brittle Areas – 15-25 inches of precipitation

Score	Living Plant Cover
0	0 – 20%
25	20 – 30%
50	30 – 50%
75	50 – 70%
100	70 – 100%

Extremely Brittle Areas - Less than 15 inches of precipitation

Score	Living Plant Cover
0	0 – 10%
25	10 – 20%
50	20 – 30%
75	30 – 50%
100	50 – 75%

3.9.2. Fuel usage should have decreased since the last evaluation.
3.9.3. Electricity usage should have decreased since the last evaluation.

Lab Testing

3.9.4. Soil Organic Carbon with bulk density to 12 inches. SOC must be on an upward trend.
3.9.5. Water Extractable Organic Carbon (WEOC) from the Haney test - WEOC scores should be increasing from previous tests.
3.9.6. % Microbially Active Carbon (MAC) from Haney test. MAC should be 50-80.

3.10. Community Dynamics

On Farm Evaluation

3.10.1. On grasslands, native plant communities should be increasing.
3.10.2. Insects/arthropods – Should be evidence of 3-5 different types of beneficial organisms.
3.10.3. Wildlife – Should be evidence of 3-5 different types of animals. Including but not limited to: grazing or browsing ruminants, small mammals, reptiles, etc.
3.10.4. Birds – Should be evidence of 3-5 different types (song, game, raptor) of local and migratory species.
3.10.5. Beneficial invertebrates – Should be evidence of more than 3-5 anecic (deep burrowing), endogeic (topsoil dwelling) earthworms, and/or other beneficial invertebrates per cubic foot of soil.

Lab Testing

3.10.6. CO_2 Respiration from Haney – Respiration should be increasing.
3.10.7. Haney Soil Health Score – Score should be increasing.
3.10.8. Phospholipid Fatty Acid (PLFA) – Total living microbial biomass should be increasing.
3.10.9. PLFA – Arbuscular Mycorrhizal colonization should be apparent and improving as a % of total fungal population.
3.10.10. PLFA – Fungal to Bacterial ratio should be improving.

4. Soil Testing Standard

4.1. Sampling Locations

4.1.1. Fields will be grouped by management strategies (cropland with similar rotations in one group, cropland with different rotations in another group, hayland, rangeland, pastureland, forest, etc.).
4.1.2. Using the Soil Web app or a soil map the primary and secondary soil textures will be determined for each of those management groups. Sampling sites will be located across the largest soil texture area.
4.1.3. Sampling for SOC, Haney, PLFA, ag stability and water holding capacity will follow the RegenAg Lab recommended sampling instructions. Sampling Instructions

4.1.4. In most intensive cropland or pastureland situations, a sample should be taken for every 50-100 acres.
4.1.5. In the case of extremely large operations with very similar management strategies and soil textures, exceptions can be made to expand the acreage per sample requirement.
4.1.6. Site locations for the SOC sample(s) will be georeferenced so it can be relocated for future sampling.
4.1.7. All sampling will be required initially and then every 3 years.
4.1.8. Testing must be done at an accredited lab. We recommend using the same lab every time. Accredited Labs

5. Regenified Verification Review Board and Field Verifier Duties

5.1. Makeup of Verification Board

5.1.1. The Verification Review Board for any determination event will consist of Regenified's Director of Standards, a Senior Verifier, and a Field Verifier that has not been associated in any way with the farm/ranch submitted for the verification process.

5.2. Planner Certification

5.2.1. Individuals wishing to be certified to write the regenerative plans required for the Regenified Verification Program must submit the following: educational background, practical experience, and a regenerative plan the individual has previously developed for a farm or ranch. A plan must be submitted for each type of operation in which they wish to be considered. Examples of different farming operations: cropland, grassland, forestry, or vegetables.
5.2.2. Their qualifications and regenerative plan submission will be reviewed by the Verification Review Board for the Applicant's knowledge and experience, as well as the plan's completeness in addressing the 6 Principles of Soil Health and the 3 Rules of Adaptive Stewardship.

5.3. Field Verifier Certification and Duties

5.3.1. Verifiers will all be trained by Regenified and will have personal instruction in the use of the Regenified protocol by the Senior Verifier.
5.3.2. All Verifiers will have attended a Soil Health Academy.
5.3.3. All Field Verifiers will have a Senior Verifier accompany them on a minimum of one verification per year.
5.3.4. The Field Verifier will collect information only. Field Verifier will not make any verification determinations.
5.3.5. The Field Verifier will submit a fully completed Field Inventory Evaluation and Lab Test Results to the Verification Review Board.
5.3.6. The Field Verifier will participate in an interview by the Verification Review Board answering any questions they may have.

5.4. Verification Board Process Used to Verify a Farm/Ranch.

5.4.1. The Verification Review Board will meet, either in person or virtually, to review all documentation submitted by the Field Verifier for the farm or ranch.

5.4.2. The Verification Review Board will use our internal scoring process to do the final scoring on the Field Verifier's verification protocol score sheet.
5.4.3. The Verification Review Board will interview the Field Verifier.
5.4.4. The Verification Review Board can also interview the Producer from the farm or ranch if needed for any clarification.
5.4.5. The Verification Review Board will make the initial determination of which tier the operation is eligible for, if any.
5.4.6. The Verification Review Board will complete this process annually to make subsequent determinations of continued eligibility or tier advancement for all farming or ranching operations.

5.5. Adverse Action Review Process

5.5.1. Prior to any adverse determinations, the Verification Review Board will reevaluate the farm or ranch scoring to determine if circumstances beyond a producer's control contributed to this adverse determination.
5.5.2. Examples of circumstances beyond a producer's control could be, but are not limited to, natural events such as drought, fire or flood. Other examples could include a severe personal or family member injury or emergency.
5.5.3. A landowner could be called on to provide additional information or documentation for this secondary review as well as an interview if requested by the board.
5.5.4. If it is determined that circumstances beyond the producer's control contributed to the adverse determination, the producer will be given a one year exception and will be required to submit a remediation plan outlining steps to be taken.

