IAMP-No tillage from a more intensive tillage (NRCS Code 329)

Description: Seeding directly into or through previous crop residue without any other mechanical soil disturbance and managing residues on the soil surface year-round.

Benefits: Reduce erosion, improve soil health, organic matter, reduce off-site losses and availability of easily transported nutrients, reduce pressure from some pests, reduce expenses associated with tillage operations.

Soil Health Benefits: Improve soil carbon retention by reducing exposure of soil organic matter (SOM) to O_2 and allowing soil organic matter to stabilize. The breakdown of crop residue will over time increase SOM.

Considerations for Success:

- Requires equipment that may not be readily available. Ask your soil and water conservation district if direct seeding equipment is available for rent.
- This practice is *not applicable to potatoes, sugar beets, and hops*.
- In some soils, contributes to acidification caused by injected N fertilization without tillage.
- Will likely require additional weed control and associated costs.
- Where soil compaction is present and significant, may experience issues with infiltration and fertilizer applications. May consider beginning with reduced tillage and taking additional measures to address compaction, such as planting tap-rooted cover crop mixes.

IAMP Preferences/Considerations: The IAMP project incentivizes practices that improve soil health and long-term agronomic productivity. To sustain improvements in soil organic matter, no-tillage should be adopted permanently throughout the cropping rotation.

Specific Details: IAMP has several requirements to document that the no-tillage practice was implemented correctly and to document the effectiveness of the practice from the current cropping strategies employed in the field. *The cost of analysis of any required soil sampling and analysis will be covered by the IAMP project*. For an overview of all required sampling for each IAMP practice, see IAMP Crop/Soil Sampling Matrix. Practice requirements are described below:

1) **Erosion Limits**: Planned tillage activities must meet the following NRCS criteria.
    a. The soil tillage intensity rating (STIR) value equivalent calculated using RUSLE shall be no greater than 20.
    b. Soil erosion rates predicted by RUSLE are less than soil tolerance levels (T).
    c. Crop rotation and residue management must result in a positive trend in the soil conditioning index (SCI). SCI change simulated with baseline and proposed plan using RUSLE.
2) **Producer Supplied Field Management Information**:
    a. Annual operation data including crop yield.
3) **Soil Carbon Sampling**: Soil samples must be collected from the enrolled field at both the start and end of the project to track changes in soil carbon over the project duration. Refer to the IAMP Soil Sampling Protocol for details.

4) **Soil Nutrient Sampling**: The IAMP project highly encourages producers to quantify impacts on no tillage from a more intensive tillage. Soil samples may be collected from the enrolled field both prior to planting and after harvesting, at one-foot intervals to a depth of 2 feet. This sampling assesses the practice's impact on available soil nitrogen and identifies any nutrient deficiencies or benefits resulting from implementation which could be ***potentially beneficial marketable information***. IAMP technical teams can assist in analyzing these data and providing a useful, certified report that can be a value-added product to that commodity. Refer to the IAMP Soil Sampling Protocol for details.

Verification Required Prior to Payment:

- Uniformly distributed residues over the entire field for the entire year (Removing residue from the row area prior to or as part of the planting operation is acceptable).
- Direct measurement of ground cover (through analysis of images or direct measurement) following planting.

IAMP Incentive Payments: $60/acre/year of implementation.

Stacking or Companion Practices: No-tillage is compatible with other incentivized IAMP practices: Biochar, Cover crops, Conservation crop rotation (>2 crops), Intercropping, Nutrient management (Basic, Enhanced and Precision), Prescribed grazing, Soil carbon amendment.

Sources:

NRCS Residue and Tillage Management, No-Till (329)

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