

## **IAMP-Conservation Crop Rotation Practice (NRCS Code 328)**

**Description:** Establish a resource conserving crop rotation. The rotation must include at least one resource conserving crop as determined for Idaho in a minimum three-year crop rotation. The crop rotation is designed to either improve soil quality through diversified cropping sequences that increase soil organic matter or add nitrogen to the system where nitrogen-fixing crops are grown immediately prior to or interplanted with nitrogen-requiring crops. The practice may reduce soil erosion (water and wind), improve soil health, improve soil moisture efficiency, and/or reduce plant pest pressures. Removing above ground crop biomass for forage through mechanical means is discouraged. The soil conditioning index should be positive and greater than the business-as-usual rotation to ensure soil organic matter is increasing. See NRCS Conservation Crop Rotation (328) and Idaho criteria for rotations as references.

**Benefits:** Improves soil health and organic matter; increases reliance on nitrogen fixing crops, reduces weed, disease, and pest pressure; improves filtration and soil moisture efficiency; improves soil aggregation depending on specific rotation

**Soil Health Benefits:** Increased soil organic matter can improve water retention, infiltration, and provide greater reliance on organic sources of nitrogen. The permanence of the increased soil organic matter depends on the rotational sequence and specific crops.

### **Considerations for Success:**

- Choose a crop rotation system that considers the following: meets goals, matches labor availability, breaks pest cycles, and minimizes soil erosion. Prioritize benefits that are the most meaningful for your operation and plan accordingly.
- Maintain flexibility when planning a crop rotation with novel crops and be ready to adapt to unexpected challenges.
- Consider crops that best match your soil potential; don't require unnecessarily high input costs and are compatible with other cash crops in your rotation.
- Tillage management should be considered in combination with crop rotation to maximize soil organic matter retention.
- In arid regions, if one of the crops replaces fallow, water availability could be reduced overall.
- Herbicide carryover. Producers need to be careful based on labels.
- The additional costs to the producers include:
  - o Seed costs,
  - o Fuel costs,
  - o Labor,
  - o Possible fertilizer costs,
  - o Possible equipment costs, and
  - o Marketing the novel crop could present challenges.

**IAMP Preferences/Considerations:** The IAMP project incentivizes practices that improve soil health, increase reliance on organic sources of nitrogen, and improve long-term agronomic productivity through diversified crop rotations. To sustain improvements in soil organic matter and nutrient cycling, one or more rotational crops should have a high C/N ratio, maximize total biomass, plant early/harvest late

(e.g. winter cover crops preferable), high nitrate uptake/conversion to biomass, in 1 out of three years. To reduce reliance on nitrogen fertilizer, consider intercropping legume crops with other nitrogen demanding crops.

Fields are eligible for incentive only if a *new* crop is added to the rotation on that field. Crops may not have been planted in the last five years.

**Specific Details:** IAMP encourages producers to document impacts of adoption of a conservation crop rotation particularly for those implementing the practice to increase soil organic matter.

**Soil Organic Matter and Biomass Sampling:** Soil organic matter changes slowly and therefore sampling the same location once every 5 to 10 years is encouraged. Measuring total biomass production from the intercropping can also be useful to document potential increases in overall biomass to the crop rotation. For an overview of all suggested sampling protocols for each IAMP practice, see [IAMP Crop/Soil Sampling Matrix](#).

**Soil Nutrient Sampling:** Soil samples may be collected from the enrolled field to provide potentially beneficial marketable information. If a producer elects to do so, sampling would optimally occur 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. Refer to the [IAMP Soil Sampling Protocol](#) for details.

**Verification Required Prior to Payment:**

- Crops shall be grown in a planned sequence as outlined in the IAMP contract.
- Geo-located pictures of the crop.
- Certificate from seed suppliers and any additional evidence (e.g. as-applied seed map) that the crops were planted and harvested as outlined in the IAMP contract, if harvest occurs before Agreement end date.

**Incentive Payments:** \$38/acre/year in the year(s) with an additional crop to the baseline rotation.

**Stacking or Companion Practices:** Conservation cropping rotations are compatible with other incentive IAMP practices implemented in the novel crop year or other years of the rotation including cover cropping, Nutrient management with reduced N applications, partial fertilization with manure, reduced or no-till, and grazing. Stacking is encouraged. Variations and creativity are encouraged, particularly those that maximize organic matter stabilization and reduce Reliance on synthetic sources of nitrogen fertilizer. If stacking with cover crop practice, must include at least one additional crop in a three-year rotation.

**Sources:**

[NRCS Conservation Crop Rotation \(328\)](#)

[USDA - Idaho Supplement To Conservation Enhancement Activity E328A](#)

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