

IAMP-Interseeding (implied within NRCS Codes 328)

Descriptions: Interseeding is the practice of planting a second crop with a primary cash crop. The practice increases plant diversity and creates beneficial interactions or services such as nutrients for primary cash crops. The following practices fall within Conservation Cropping Systems Code 328. Within Code 328, E328N applies. Only Code 328 is authorized under the IAMP project, allowing any of these specific intercropping practices.

- *Interseeding legumes:* direct seeding legumes into a primary cash crop, either at the planting of the 1st crop or later (after establishment). Legumes are specified for their ability to fix nitrogen, potentially reducing the need for applied inorganic nitrogen.
- *Relay cropping:* a mix cropping or interseeding practice in which the second-planted crop (“relay crop”) is planted into an established primary cash crop in a manner that allows separate agronomic maintenance and harvest of each of the crops unless otherwise defined in the Crop Provisions (e.g., planting legumes/cover crops into a small grain field before harvesting small grains).
- *Companion planting:* planting different crops in proximity to provide ground cover and weed control for the slow-growing crop (e.g., oat-alfalfa).
- Other approaches to intercropping can be considered if they improve soil health or reduce input requirements.

Benefits: Interseeded legumes provide a source of N that may allow reductions in applied N fertilizer during the cropping year or the subsequent year; improves cropping system diversity; uses resources (e.g., light, water, and nutrients) more efficiently than monocropping; potentially results in overyielding; may have lower insect pressure. Potentially harvestable with the main crop for unique marketing opportunities (e.g., mixed grain for animal feed and soups and potentially high-protein pasta) or for separation and marketing as single commodities.

Soil Health Benefits: Potentially increases crop residue that can be incorporated or increased root activity.

Considerations for Success:

- Seeding modifications are likely to require additional or modified equipment. Talk to your Soil and Water Conservation district about the potential for rental equipment.
- Consult with your implementing partner and/or crop advisor to select plant species that will be compatible and not over-compete cash crops.
- Potential yield loss in the main crop due to competition between crop species.
- Mid-season plant tissue and/or soil samples are recommended to understand nutrient interactions and adjust nutrient management applications as necessary.
- May harvest small grains and legumes separately if the harvestable parts (e.g., spikes and pods) are of different heights.
- Extra costs for sorting/cleaning mixed seeds.

IAMP Preferences/Considerations: The IAMP project incentivizes practices that improve soil health, increase reliance on organic sources of nitrogen, and reduce input costs through diversified cropping

systems. Interseeding legumes provides an alternative source of N that can enable reduced N application rates. Interseeding can also result in increased crop biomass particularly with companion planting in row crops where rows may typically fallow. Other diversified cropping approaches may or may not provide the intended soil health and agronomic benefits. This practice will likely be implemented and incentivized coupled with reduced applied N either in the implementation year or in the following year in the rotation.

Specific Details: IAMP encourages producers to document impacts of adoption of inter-cropping through soil and crop biomass sampling.

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:

- Certificate from seed suppliers.
- Crop yield for each crop
- Georeferenced photo verification of intercropping during the growing season.
- Crops planted in a planned sequence as outlined in the IAMP contract.

Incentive Payments: \$60/acre in the year of implementation

Stacking or Companion Practices: Fall compost addition, biochar, reduced or no-till, N management, cover crops (in rotation), conservation cropping. As part of a rotation, the additional N from an interseeded legume could support the Nutrient management practice (reduced N by 15%) in the following year.

Sources:

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

[USDA - Idaho Supplement To Conservation Enhancement Activity E328N](#)

[WSARE Guidelines for Intercropping](#)

[USDA RMA Managers Bulletin: MGR-22-002](#)

This material is based upon work supported by the U.S. Department of Agriculture, under agreement number NR233A750004G038. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the

views of the U.S. Department of Agriculture. In addition, any reference to specific brands or types of products or services does not constitute or imply an endorsement by the U.S. Department of Agriculture for those products or services. The Innovative Agriculture and Marketing Partnership (IAMP) is funded with a five-year, \$59 million grant through the U.S. Department of Agriculture's Advancing Markets for Producers program, award No. NR233A750005G038. The total project funding is \$59,240,577, of which 99.84% is the federal share. USDA is an equal opportunity provider, employer, and lender.