USDA United States Department of Agriculture

Minnesota Ecological Science Job Approval Authority Fact Sheet

Conservation Crop Rotation (328)

DEFINITION:

A planned sequence of crops grown on the same ground over a period (i.e. the rotation cycle).

ESJAA INFORMATION:

Job Classes	Control Factors
	Crop Type
Job Class I	Standard Row/Forage Crops
Job Class II	Specialty/Vegetable Crops
Job Class III	Organic Specialty/Vegetable Crops
Job Class IV	All

CONTROL FACTORS:

The controlling factor is based on crop type. The unit for the Conservation Crop Rotation practice is crop type.

KNOWLEDGE, SKILLS, AND ABILITIES (KSA):

1. Knowledge of State's Crops and Cropping Systems
2. Knowledge of Soil Health and Management
3. Ability to use Current Wind and Water Erosion Prediction Tools
4. Knowledge of Tillage Systems used in the State
5. Knowledge of Adaptive Species of Cover

ADDITIONAL KSAs FOR ALL PRACTICE STAGES:

JAA Levles I-IV

- General understanding of local crop pest cycles.
- Knowledge of residue characteristics for various cropping systems.
- Awareness of typical planting dates and harvest dates for local cropping systems.
- Knowledge of planting methods for different crops and equipment necessary.
- Awareness of harvest methods and influence on crop residue.
- General knowledge of crop applicability in local region (i.e. market viability).

COMMON ASSOCIATED PRACTICES:

Conservation Crop Rotation (328) is commonly applied with practices such as Contour Farming (330), Cover Crops (340), Residue and Tillage Management, No Till (329), Residue and Tillage Management, Reduced Till (345), and Terraces (600).

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ADDITIONAL MATERIALS:

- Table 1: Crop Types located in the Conservation Crop Rotation (328) Conservation Practice Standard
- Table 2: High Residue Producing Annual Crops located in the Conservation Crop Rotation (328) Conservation Practice Standard
- Green, B., D. Kaminski, B. Rapp, M. Celetti, D. Derksen, L. Juras, and D. Kelner. 2005 Principles and Practices of Crop Rotation. Saskatchewan Agriculture and Food
- Hunt, N.D., M. Liebman, S.K. Thakrar, and J.D. Hill. 2020 Fossil Energy Use, Climate Change Impacts, and Air Quality-Related Human Health Damages of Conventional and Diversified Cropping Systems in Iowa, USA. Environ. Sci. Technol. 54 (18), 11002-11014
- Karlen, D.L., E.G. Hurley, S.S. Andrews, C.A. Cambardella, D.W. Meek, M.D. Duffy, and A.P. Mallorino. 2006 Crop Rotation Effects on Soil Quality at Three Northern Corn/Soybean Belt Locations. Agron. J. 98:484-495
- Liebig, M.A., D.L. Tanaka, J.M. Krupinsky, S.D. Merrill, and J.D. Hanson. 2007 Dynamic Cropping Systems: Contributions to Improve Agroecosystem Sustainability. Agron. J. 99:899-903
- Sherrod, L.A., G.A. Peterson, D.G. Westfall, and L.R. Ahuja. 2003 Cropping Intensity Enhances Soil Organic Carbon and Nitrogen in a No-Till Agroecosystem. Agron. J. 67:1533-15
- University of Minnesota Extension. 2019 Soil Organic Matter in Cropping Systems