

Cropping/Tillage System Adjustment Requests

Question 1: *I have a CSP contract and want to change my rotation to add another year of corn. What do I need to do?*

Answer: Always check with the local NRCS field office staff before changing your cropping sequence or tillage system since changing those may affect your compliance with the CSP contract, or your payment level. For CSP, it is important to maintain at least the benchmark level of resource protection that the contract was based on for the entire contract period.

With high corn prices and high demand for corn to make ethanol, many producers are planning to grow more corn this year. In cases where additional year(s) of corn are either added to the rotation or corn is substituted for other crops, the goal is to maintain or improve the soil conditioning index (SCI) score to avoid a contract violation. If corn, a high residue producing crop, is substituted for a low residue producing crop such as soybeans or cotton and essentially the same tillage system is used, (C-SB-W changed to C-C-W) the result will likely be either no change in the SCI or a slight improvement since more residue is grown and there is a little more soil protection depending on the tillage system.

Likewise, if an additional year of corn is added to a rotation containing low residue crops like soybeans or cotton (C-SB changed to C-C-SB) the result will be a slight improvement in the SCI since more biomass is returned and the system has good residue protection two-thirds of the time rather than half the time. With the above rotation change, if the tillage system is changed to a less aggressive tillage system, such as switching from conventional to mulch-till or from mulch-till to no-till or strip-till, additional improvement in the SCI can be expected.

However, if corn replaces a year of hay in the rotation (C-SB-O-H1-H2-H3 is changed to C-SB-O-H1-H2-C) or corn is added to a rotation containing hay, (C-SB-O-H1-H2-H3 is changed to C-C-SB-O-H1-H2_H3) and the corn is grown using conventional tillage or mulch-till, the result will likely be a slight decline in the SCI. However, switching to No-till corn in these cases may show a slight improvement in the SCI.

Question 2: *Is there a quick way for me to know if any crop rotation change will affect my SCI?*

Answer: Always seek advice from your local NRCS staff before making cropping sequence or tillage system changes that may affect your compliance with the CSP contract and SCI. There

are several complex relationships used in calculating the SCI involving the erosion rate, the amount of biomass grown and returned to the soil, and the aggressiveness of the tillage system. In general if corn is being substituted for a lower residue crop and the same type of tillage system used, one can expect an increase in the SCI.

Question 3: *I plan to change my crop sequence but will maintain my long term rotation. Does this impact my CSP payment or eligibility?*

Answer: Always seek advice from your local NRCS staff before making crop rotation changes that may affect your compliance with the CSP contract. They can easily evaluate the change using the RUSLE2 model. The cropping sequence and long term rotation are really the same thing. Both cropping sequence and rotation involve the specific crops grown and the order or sequence of the crops. Since the residue produced by one crop provides the soil erosion protection and biomass necessary to maintain soil organic matter for succeeding crops, the erosion rates and SCI can be affected if the crops are changed or the order or sequence is changed.

Question 4: *I've been approached about selling corn residue after harvest. Does this affect the SCI and my CSP contract?*

Answer: Definitely. Your SCI score is based on a specific crop rotation and tillage/residue management system. Removing and selling corn stalks or other residue, negatively affects two of the components of the SCI score, the erosion rate and the organic matter or biomass amount returned to the soil. The SCI will be reduced, potentially affecting your CSP contract. Always seek advice from your local NRCS staff before making decisions to sell crop residue that may affect your compliance with the CSP contract. There may be opportunities to switch to a less intensive conservation tillage system and/or grow winter cover crops to counter balance the negative effects of harvesting crop residue.

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