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## NF97-321 Converting CRP to Cropland in the Nebraska Panhandle

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## Converting CRP to Cropland in the Nebraska Panhandle

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Significant improvements in soil physical, chemical, and biological properties have occurred on Conservation Reserve Program (CRP) ground over the 10- or 11-year contract period. Improvements in soil stability, tilth, water infiltration rate, pore size, water holding capacity, quality and quantity of organic matter, total carbon and nitrogen have been measured on CRP ground. To sustain these improvements as long as possible, the conversion of CRP to cropland should involve the use of minimum tillage or no-till, and possibly intensive crop rotations.

In 1997, it is anticipated that Panhandle wheat producers will rebid most of their expiring CRP land. Unfortunately, the results of the bidding process are unlikely to be known before June. This is too late to prepare land for a successful fall seeding of winter wheat. Therefore, the cultural practices included here apply to either the spring crop or winter wheat preparations begun in 1998.

If CRP land is not going to be rebid in 1997, land preparation for recropping to winter wheat should begin as early as May 1. Preparations begun May 1 will result in the sacrifice of one-sixth of the current year CRP payment. Land preparation before May 1, other than mowing or burning, is not permitted without first terminating the CRP contract; however, it is already too late to do this for 1997.

Returning CRP land to crops should be tempered with the understanding that it costs \$100 to \$125 per acre to establish a good stand of grass in CRP. The decision to return to crops depends on income potential from future grain.

In Western Nebraska most CRP lands, if returned to crops, will be sown to proso millet and/or winter wheat. Millet prices have been highly variable and with the reduction of federal government involvement in agriculture, wheat prices are projected to become more volatile. Price volatility means price risk. The demand for grazing either within or outside each producer's operation, the availability of water, and water development and fencing costs need to be considered before preparing CRP lands to return to cropping.

## CRP Vegetation Control

Vegetation may be controlled by herbicides and/or tillage. The key to successful chemical vegetation control is applying a systemic herbicide such as Roundup® to plants when carbohydrates (plant food) are moving to the roots. In cool-season species such as wheatgrasses and sweet clover, this occurs in the fall and late spring. However, in the Nebraska Panhandle, spring applications provide more consistent control than fall applications because plants are often under drought stress in the fall. For cool-season species, allow 4-6 inches of new growth to occur in the spring before applying Roundup. In warm-season species such as bluestems, grammas, and switchgrass, apply herbicides in midsummer when food is moving to the plant roots. Increased herbicide coverage may be obtained by mowing, haying, grazing, or burning old growth, and allowing regrowth to occur before application. Haying and grazing may not be allowed prior to CRP contract expiration.

Tillage also may be used to control established vegetation. A conversion strategy using minimum tillage and timely herbicide application can be effective for maintaining soil quality and producing acceptable yields. There are pros and cons for using tillage as part of the CRP conversion process. In land that is to be summer fallowed, tillage smooths and mellows the seedbed and allows planting with conventional drills, even under dry conditions. CRP land can be extremely hard after a dry summer fallow period, making seeding difficult with all but the heaviest drills. Annual grass weeds also appear to be more of a problem when tillage is not used during CRP conversion. Tillage also provides established vegetation control when converting CRP to crop production. While herbicides have worked very well when environmental conditions are favorable for rapid plant growth, under less favorable conditions they have provided inconsistent control. The use of 24-32 oz/A of Roundup with tillage can provide very effective vegetation control. The drawbacks to tillage include more rapid loss of soil quality and less soil water storage. Tillage also may make it more difficult for producers to achieve an acceptable conservation plan, which is required to maintain eligibility for USDA programs.

In 1996, demonstration trials were used to evaluate the effectiveness of three tillage methods in preparing CRP lands to return to cropland. These methods were: 1) no-till, 2) reduced-till using herbicides and non-inversion tillage, and 3) plowing using a moldboard plow, tandem disk, and chisel plow. The operations and per acre estimated costs used in Tables *1a-1c* are based on University of Nebraska Cooperative Extension publications, *Nebraska Crop Budgets* (EC 96-872-S) and *Guide for Herbicide Use in Nebraska* (EC 96-130-D). These cost estimates and proso millet income are to be used for reference to take CRP land out of grass and prepare it for recropping. These estimates would apply to the proso millet crop, the winter wheat crop to be sown in the fall, or both. Use these estimates in preparing a whole farm budget depending on rotation and fallow periods. The winter wheat costs will apply to fallowed land as well as wheat acres.

Some CRP payments may be lost if the land is returned to crops. Evidenced by these three cost estimates, plowing cool-season grasses is the most practical method of preparing the land to recrop due to proso millet income. Although reduced-till was less costly, the ground was too rough to plant millet. This might be avoided by substituting a light discing for one or more of the sweep tillage operations.

To establish net costs add the portion of the current year CRP payment lost due to cropping in May (liquidated damages) and deduct the value of the millet crop if applicable. Remittance of the CRP payment will vary. Contact your Consolidated Farm Services Office to determine costs per acre per month. The value of the millet crop is estimated to be \$60 per acre (15 cwt × \$4).

## Intensive Crop Rotations

Converting CRP land to crop production offers producers an excellent opportunity to establish more intensive crop rotations. By growing two crops in three years or three crops in four years, producers gain several important benefits. First, they reduce the use of fallow in the rotation. Fallow is a major contributor to soil quality degradation and is an inefficient water conservation practice. Tillage during fallow aerates the soil and hastens the decomposition of organic matter. No plants are allowed to grow during fallow, so no organic matter input occurs, and the soil may be eroded by wind and water. Weeds, insects, and other pest cycles are disrupted when summer crops are rotated with winter wheat. For example, downy brome, jointed goatgrass, and rye are much less troublesome in winter wheat grown in rotation with summer crops such as proso millet or sunflower.

Summer crops often respond very favorably to no-till practices. The use of no-till for a portion of the rotation reduces over-all tillage and more crop residue is maintained near the soil surface. A producer who plans to establish a more intensive crop rotation that includes no-tilled summer crops may be less concerned about using tillage, even plowing, for the initial breakout of the CRP land. The long-term benefits of such a cropping system may outweigh the short-term detrimental effects of a one-time plowing on soil quality.

### Planning

A potential plan for CRP conversion would involve discing or plowing one-third of the field to be summer fallowed prior to seeding winter wheat in the fall (*Figure 1*). On the other two-thirds of the field, Roundup would be applied at a rate of 32 oz/A in early May and again at 24 oz/A in early June if needed. Also, fertilizer would be applied, and a summer crop such as proso millet would be no-till seeded. If soil moisture is limited in the top three feet of soil, the summer crop should not be planted, and the area should be fallowed for a fall crop or a summer crop the next year. Annual grass weeds may be a problem in the no-till millet the first year out of CRP. If annual grass weed problems are anticipated, the producer may use some tillage or substitute a broadleaf summer crop such as sunflower. In year two, half of the millet ground would be fallowed and half would be reseeded to another summer crop. By year three, a three-year system of winter wheat-summer crop-fallow would be established. Such a plan would provide income in the first year after contract expiration and establish a more intensive system to maintain the benefits of CRP for a longer time.

Total field size divided by thirds

|               |                                       |                                       |                                       |
|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| <b>Year 1</b> | Summer fallow<br>----<br>Winter wheat | Summer<br>crop                        | Summer<br>crop                        |
| <b>Year 2</b> | Winter<br>wheat                       | Summer<br>crop                        | Summer fallow<br>----<br>Winter wheat |
| <b>Year 3</b> | Summer<br>crop                        | Summer fallow<br>----<br>Winter wheat | Winter<br>wheat                       |

### Fertility

Initially, soil microorganisms use available nitrogen when they convert plant residues to soil organic matter. Nitrogen is unavailable for plant use during this time. Lack of available nitrogen may require additional fertilizer inputs during the first crop year after CRP to compensate for the immobilized nitrogen. Any soils being converted from CRP to cropland should be tested as soon as possible for fertilizer requirements.

Before implementing any conversion plan on land enrolled in CRP, contact your local NRCS (Natural Resources Conservation Service) field office for assistance and to assure that FSA requirements are met. Contact your local University of Nebraska Cooperative Extension office for more CRP conversion information.

**Table 1a. Estimated operations and per acre costs for no-till conversion of CRP to cropland.**

| Date    | Crop   | Operation                              | Cost/acre       | No. of acres | Cost estimate |
|---------|--------|--|-----------------|--------------|---------------|
|         |        |  | \$              |              | \$            |
| April 2 | Both   | Mow                                    | 1.55            | _____        | _____         |
| May 8   | Both   | Apply Roundup (48 oz/A)                | 20.81           | _____        | _____         |
| June 4  | Both   | Apply Roundup (24 oz/A)                | 12.15           | _____        | _____         |
| June 12 | Millet | Plant                                  | 5.00            | _____        | _____         |
| June 29 | Millet | Fertilize (30 lb N/A)                  | 6.00            | _____        | _____         |
| July 12 | Wheat  | Apply Fallow Master (44 oz/A)          | 4.64            | _____        | _____         |
| Sep. 2  | Wheat  | Apply Landmaster BW (54 oz/A)          | 4.84            | _____        | _____         |
|         | Both   | Labor — 0.75 hours @ \$6.50/hour       | 4.88            | _____        | _____         |
|         | Millet | Harvest                                | 11.25           | _____        | _____         |
|         | Both   | Overhead                               | 2.85            | _____        | _____         |
|         | Both   | Management                             | 7.00            | _____        | _____         |
|         | Both   | Depreciation and interest on equipment | 29.36           | _____        | _____         |
|         | Millet | Apply insecticide (grasshoppers)       | 5.00            | _____        | _____         |
|         |        | <b>Total Cost</b>                      | <b>\$115.33</b> | _____        | \$_____       |

**Table 1b. Estimated operations and per acre costs for reduced-till conversion of CRP to cropland.**

| Date    | Crop  | Operation               | Cost/acre | No. of acres | Cost estimate |
|---------|-------|-------------------------|-----------|--------------|---------------|
|         |       |                         | \$        |              | \$            |
| April 2 | Wheat | Mow                     | 1.55      | _____        | _____         |
| May 8   | Wheat | Apply Roundup (32 oz/A) | 15.04     | _____        | _____         |
| May 22  | Wheat | Sweep tillage           | 1.35      | _____        | _____         |
| June 7  | Wheat | Sweep tillage           | 1.35      | _____        | _____         |

|         |       |  |                |       |          |
|---------|-------|--|----------------|-------|----------|
| July 12 | Wheat | Sweep tillage                          | 1.35           | _____ | _____    |
| Aug. 7  | Wheat | Chisel with deadrod                    | 2.42           | _____ | _____    |
| Sep. 11 | Wheat | Rodweed                                | 2.60           | _____ | _____    |
|         | Wheat | Labor — 0.90 hours @ \$6.50/hour       | 5.85           | _____ | _____    |
|         | Wheat | Overhead                               | 1.82           | _____ | _____    |
|         | Wheat | Management                             | 7.00           | _____ | _____    |
|         | Wheat | Depreciation and interest on equipment | 31.84          | _____ | _____    |
|         |       | <b>Total Cost</b>                      | <b>\$72.17</b> | _____ | \$ _____ |

**Table 1c. Estimated operations and per acre costs for conventional conversion of CRP to cropland.**

| Date    | Crop   | Operation                              | Cost/acre      | No. of acres | Cost estimate |
|---------|--------|--|----------------|--------------|---------------|
|         |        |  | \$             |              | \$            |
| April 2 | Both   | Mow                                    | 1.55           | _____        | _____         |
| May 1   | Both   | Plow                                   | 3.50           | _____        | _____         |
| May 2   | Both   | Tandem disk                            | 1.35           | _____        | _____         |
| May 22  | Both   | Tandem disk                            | 1.35           | _____        | _____         |
| June 7  | Both   | Chisel w/9" sweeps and harrow          | 2.42           | _____        | _____         |
| June 12 | Millet | Plant                                  | 5.00           | _____        | _____         |
| June 29 | Millet | Fertilize (40 lbs. N)                  | 8.00           | _____        | _____         |
| Aug. 7  | Wheat  | Chisel with deadrod                    | 2.42           | _____        | _____         |
| Sep. 11 | Wheat  | Rodweed                                | 1.30           | _____        | _____         |
|         | Both   | Labor — 0.75 hours @ \$6.50/hour       | 4.88           | _____        | _____         |
|         | Millet | Harvest                                | 11.25          | _____        | _____         |
|         | Both   | Overhead                               | 1.82           | _____        | _____         |
|         | Both   | Management                             | 7.00           | _____        | _____         |
|         | Both   | Depreciation and interest on equipment | 31.84          | _____        | _____         |
|         | Millet | Apply insecticide (grasshoppers)       | 5.00           | _____        | _____         |
|         |        | <b>Total Cost</b>                      | <b>\$88.68</b> | _____        | \$ _____      |

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