United States Department of Agriculture

Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

CONTROLLED TRAFFIC FARMING

CODE 334

(ac)

DEFINITION

Confining all traffic from farm equipment to specific traffic lanes.

PURPOSE

This practice is used to accomplish the following purpose:

- Reduce soil compaction.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland.

CRITERIA

General Criteria Applicable to All Purposes

Ensure that controlled traffic lanes are designed and used in a manner that avoids concentrated flow that may result in gully erosion.

Limit traffic to no more than 33 percent of the soil surface for the interior of the field. The same tracks must be used for all traffic.

Inflation pressure will be minimized to reduce compaction on crop rows where flotation tires are used.

Use a Geographic Positioning System (GPS) to guide field operation traffic lanes when the designated traffic lanes are obscured.

Once the traffic lanes are established, do not till deeper than 4 inches.

CONSIDERATIONS

Repair existing ruts prior to establishing the system.

In severly compacted soils, perform a subsoiling operation prior to establishing the controlled traffic lanes.

For narrow width or drilled crops, use a skip row system (where the wheel tracks are not planted) or use GPS guidance.

Tire or rubber tracks should be less than 26 inches wide or less than the row crop spacing. Wide flotation tires do not work well in a CTF system. A better alternative to distrubute load is to use split duals.

Once lanes or traffic patterns are well established, operations which previously required the use of duals or extra-wide tires may no longer be needed. Removing duals will significantly reduce the amount of trafficked area.

Extend the front axles of tractors to match the rear tires to reduce traffic lanes.

All incidental traffic (pich-ups) that crosses the field utilize the designated traffic pattern.

No-till, direct-seed planting systems, and cover crops can further reduce compaction.

All equipment should cover the same working width or multiples of that width. Adjust the traffic pattern of each piece of equipment to minimize the number of lanes or tramlines across the field.

As equipment is replaced, consider the working width of the equipment and how it fits into the controlled traffic farming system.

Hitch offsets can help with positioning row placement in relation to previous crop rows and residues without altering wheel track lanes. Utilize hitch offsets in no-till systems to avoid salt buildup and/or pH imbalances where fertilizer is banded in the same zone year after year.

Extend tractor tires or tracks to the width of the combine and grain cart to reduce traffic lanes. Check equipment warranty when extending axle widths.

PLANS AND SPECIFICATIONS

Develop plans and specifications for each field or treatment unit according to the Criteria section requirements above, and Operation and Maintenance section requirements below. Specifications must describe the requirements to apply this practice to achieve the intended purpose. Record the following specification components in an approved NRCS CPS Controlled Traffic Farming (Code 334) implementation requirements document.

- Crops to be grown
- Row widths of all crops
- Width and spacing of tires/tracks of all equipment
- Percent of the field that receives traffic

OPERATION AND MAINTENANCE

As equipment is replaced, purchase equipment that will comply with the CTF system.

If ruts develop, repair them and reestablish controlled traffic lanes.

REFERENCES

Reeder, R., and J.M. Smith. 2000. Controlled Traffic. In: Conservation Tillage Systems and Management, MWPS-45. Midwest Plan Service, (Pages 77–82) Ames, IA.

Reeder, R.C. 2002. Controlled traffic. Encyclopedia of Soil Science, pp.233–236. Marcel Dekker, Inc., New York, NY.

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