



Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

CONTROLLED TRAFFIC FARMING

CODE 334

(ac)

DEFINITION

~~Confining~~Controlled traffic farming (CTF) is confining all high load wheel/track traffic from farm equipment to specific traffic lanes ~~or tramlines (traffic pattern) in crop fields year after year.~~

PURPOSE

This practice is used to accomplish ~~one or more of~~ the following ~~purposes—purpose:~~

- ~~Improve~~Reduce soil ~~health by limiting wheel traffic compaction to limited traffic lanes.~~

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland ~~where wheel traffic can be limited to specific traffic lanes.~~

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 ~~wheel/track~~ 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 high load traffic ~~continually. High wheel load traffic is defined here as any tire or track that bears a load higher than 6,000 pounds at 30 psi or 6 tons per axle.~~

~~If wide flotation tires are used they must be big enough that the inflation~~Inflation pressure will be ~~below 18 psi~~minimized to ~~minimize~~reduce compaction on ~~trafficked~~crop rows ~~where flotation tires are used.~~

Use a Geographic Positioning System (GPS) to guide field ~~operations and~~ ~~wheeled/track~~operation traffic lanes when the designated traffic lanes are obscured.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at <https://www.nrcs.usda.gov/> and type FOTG in the search field.

USDA is an equal opportunity provider, employer, and lender.

NRCS, NHCP
September 2015Month Year

Once the ~~tram lines or~~ traffic ~~pattern is~~ lanes are established, do not till

deeper than 4 inches. **CONSIDERATIONS**

Repair existing ruts prior to establishing the system.

In severely 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.

~~Recognize tire~~ 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. ~~Split duals are a~~ A better alternative ~~if single tires are inadequate to distribute load is to use split duals.~~

Once ~~tram lines~~ lanes or traffic patterns are well established, operations which previously required the use of duals or extra-wide tires may no longer ~~need them~~ 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 (~~high and low load~~ pick-ups) that crosses the field ~~should~~ utilize the designated traffic pattern. ~~This includes custom applicators, pickup trucks, etc.~~

~~Consider no~~ No-till or, direct-seed planting systems ~~to,~~ and cover crops can

further reduce compaction.

~~Utilize cover crops known to help reduce compaction, such as cereal rye, oil seed radish, or annual ryegrass.~~

~~Consolidated tramlines have lower rolling resistance and wheel slip than cultivated soil.~~

~~The compacted traffic lanes/tramlines are able to support higher axle loads, so tramlines also allow machinery access in higher soil moisture conditions.~~

~~Consolidated wheel tracks increase traction and reduce cultivation draft in the uncompact soil. Consider subsoiling prior to establishing the controlled traffic lanes.~~

~~Repair all ruts prior to establishing the system.~~

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 ~~older~~ equipment is replaced, consider the working width of the equipment and how it fits into the controlled traffic farming system. ~~The goal of controlled traffic farming is to limit the wheel/track traffic to as low a percent of the field as possible. This can be improved by having all equipment with the same working width or multiples of that width.~~

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. ~~Hitch offsets can also help with positioning row placement in relation to previous crop rows and residues without altering wheel track lanes.~~

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

PLANS AND SPECIFICATIONS

~~Plans~~Develop plans and specifications ~~shall be prepared~~ for each field ~~site where~~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 system will be installed. ~~Record practice specifications on the Controlled Traffic Farming Implementation Requirement (Code 334) implementation requirements document.~~ ~~Plans and specifications will include:~~

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

OPERATION AND MAINTENANCE

As ~~older~~ equipment is replaced, purchase equipment that will ~~enhance~~comply with the CTF system, ~~reducing the number of tramlines in the system.~~ If ruts develop, ~~use tillage or other specialized equipment to remove ruts~~repair them and reestablish controlled traffic lanes.

REFERENCES

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

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

~~M.A.~~ Hamza, ~~M.A.~~, W.K. Anderson. 2005. Soil compaction in cropping systems - A review of the nature, causes and possible solutions. Soil & Tillage Research 82 (2005) 121–145.