



PEST MANAGEMENT ENHANCEMENT

April 2006

NEBRASKA

Name: _____

Reducing Pesticide Spray Overlap Through Technology

The Conservation Security Program (CSP) offers a new enhancement activity opportunity to reward or encourage the improvement in water quality by reducing pesticide spray overlap through the use integrating Global Positioning Systems (GPS), Real Time Kinetics (RTK), laser technology and computer guided spray nozzles too precisely and efficiently target spray to eliminate overspray. This enhancement is available once the applicant qualifies for CSP by meeting the program’s entry requirements for soil and water quality.

The following information will help landowners and managers determine if they are eligible for the offered payment(s) for this water quality enhancement activity.

Required Elements:

- Sprayers are equipped with Global Positioning systems (GPS), Real Time Kinetics (RTK), or laser technology.
- Sprayers are equipped with computer guided spray nozzles in order to precisely and target spray and eliminate overspray by shutting off nozzles when an area previously sprayed is crossed.
- All overspray must be eliminated.
- A description of the system used to reduce spray overlap and the location/acres must be documented on the referenced job sheet.

Reducing Pesticide Spray Overlap through Technology

Application of pesticides by sprayers using tractors without steering guidance systems result in as much as 24 inches in overlap to ensure full coverage. Reducing the sprayer overlap has the potential to reduce not only pesticides potentially entering the ground and surface water supplies it has the potential to reduce farm production costs. Leading edge technologies can reduce overspray.

If an overspray of 24 inches is assumed for each pass of the sprayer and if the sprayer boom is assumed to be 40 feet wide, nearly 2,300 square feet of each acre is subject to multiple applications of chemicals. This amounts to about 5 percent of each acre with overlap spraying.

Using GPS or other similar guided measure technology to reduce pesticide spray overlap

Traditional methods of pesticide application are being replaced by integrating Global Positioning Systems (GPS), Real Time Kinetics (RTK), laser technology, and computer guided

spray nozzles to precisely and efficiently target spray to eliminate overspray.

Light bar technology helps equipment operators to steer more precise paths that reduce overspray. GPS auto guidance systems take over steering completely except for the end of the row. There are two types of GPS auto guidance systems. Differential corrected GPS (DGPS) reduces the overspray to about 4 inches. RTK GPS is accurate to sub-centimeter accuracy and is used in commercial survey to less than 1 inch (essentially zero overspray). A base unit provides the reference point that the computer and laser equipment use to establish a position in the field.

Startup costs for a DGPS are about \$10,000 and about \$60,000 for a RTK GPS. Typically, these costs can be recouped in two years on a 2,000 acre farm.

Documentation Required:

A description of the system of reducing overlap, including fields being applied to and equipment is being used. Use the following Table for documentation and attach a plan map showing the location of where reduced pesticide spray overlap through the use of technology was used. An example is provided to assist you.

Tract & Field #s	Acres Where Pesticide Spray Overlap was Reduced Through Technology
T2345 - 7, 11,	45
Tract & Field #s	Acres Where Pesticide Spray Overlap was Reduced Through Technology

Certification:

I certify that I have reduced pesticide spray overlap through the use of technology as listed above.

Name: _____ Date: _____