INVASIVE SPECIES DETECTION: CANADA THISTLE

An NDVI map helped confirm the presence of a Canada Thistle infestation on this 122 acre corn field. A flat rate herbicide prescription was applied to the entire field. As shown in the aerial imagery, inspections confirmed that only 0.6 acres required treatment. An herbicide reduction of over 99% would have been possible with a variable rate prescription, decreasing the overall environmental impact and herbicide input costs.

COLORIZED NDVI MAP

Canada Thistle, *Cirsium arvense* (L.)

*Removal of noxious weed required by law*

The blue areas on the map indicate shadows from cloud cover. This did not affect the ability to detect the invasive thistle.

CROP: CORN
LOCATION: NE KANSAS
ACREAGE: 121.82

ENVIRONMENTAL IMPACT
Prescription: 10 gallons/acre (diluted)
6.6 pints/acre (concentrate)

Flat rate area: 121.82 acres
Variable rate area: (-) 0.60 acres

Herbicide waste: 121.22 acres
x 10 gallons/acre (diluted)
x 6.6 pints/acre (concentrate)

Herbicide: 1,212.2 gallons (diluted)
Reduction: 100 gallons (concentrate)

COST-SAVINGS IMPACT
Herbicide cost: $32.27/acre
Flat rate treatment: $3,931.13
Variable rate & services: (-) $506.63

Net cost reduction: $3,424.50

Cost reduction/total acreage
($3,424.50/121.82)

INPUT COST SAVINGS:
$28.11/acre