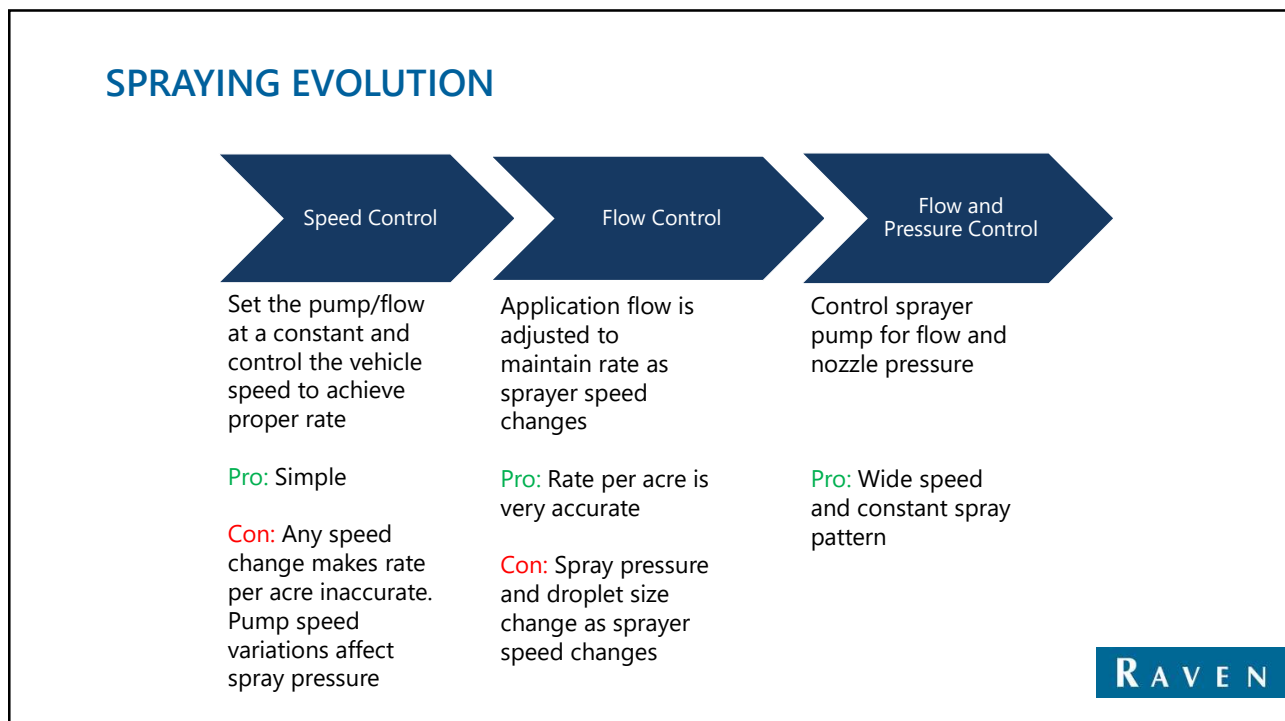




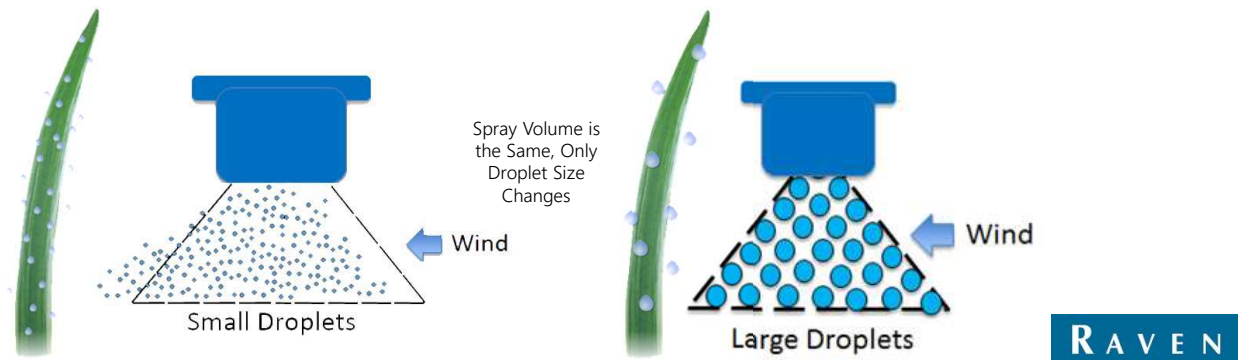
1



2

THE IMPORTANCE OF DROPLET SIZE

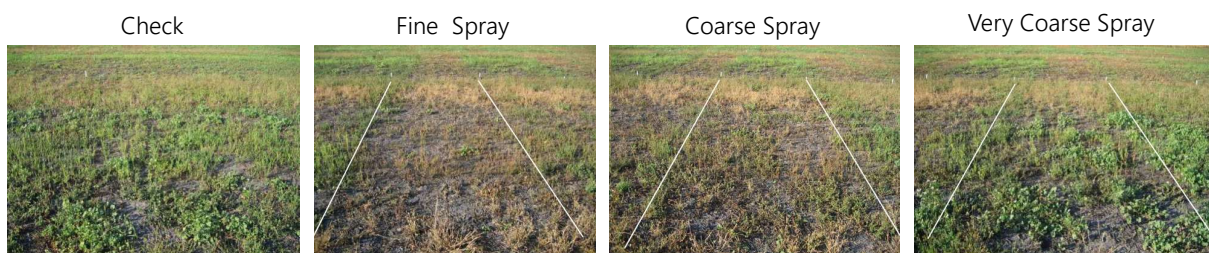
- Every chemical has a recommended droplet size
- Small droplets have the advantage of more “bullets” - may be prone to drift or evaporation
- Large droplets are less likely to drift - may roll off the plant which can lead to coverage problems.



3

DROPLET SIZE

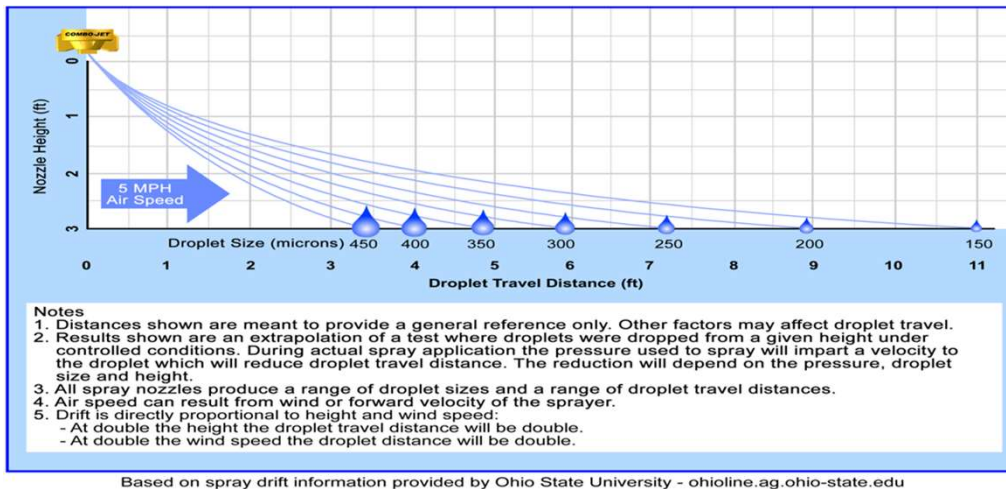
IMPACT DROPLET SIZE MAY HAVE ON HERBICIDE EFFECTIVENESS



RAVEN

4

COVERAGE VS. DRIFT CONTROL



Based on spray drift information provided by Ohio State University - ohioline.ag.ohio-state.edu

RAVEN

5




HAWKEYE®

NOZZLE CONTROL SYSTEM

RAVEN

11



HAWKEYE®

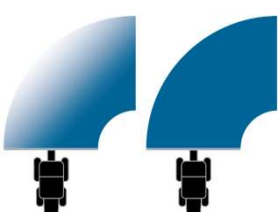
NOZZLE CONTROL SYSTEM

- Provides accurate application with a consistent spray pattern and droplet size at every nozzle while reducing spray drift
- Simple installation
- Easy setup and calibration

RAVEN

12

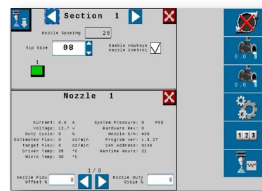
FEATURES AND BENEFITS



Without Hawkeye With Hawkeye

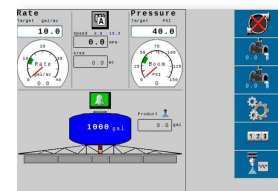
TURN COMPENSATION

- Standard feature
- Reduces over and under application



INDIVIDUAL VALVE DIAGNOSTICS

- Give operator instant feedback



OPTIMUM APPLICATION TRAVEL SPEED RANGE

- Displays on the run screen

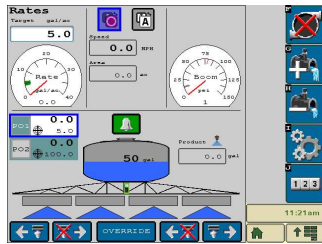
RAVEN

13

HAWKEYE

PRESSURE CONTROL

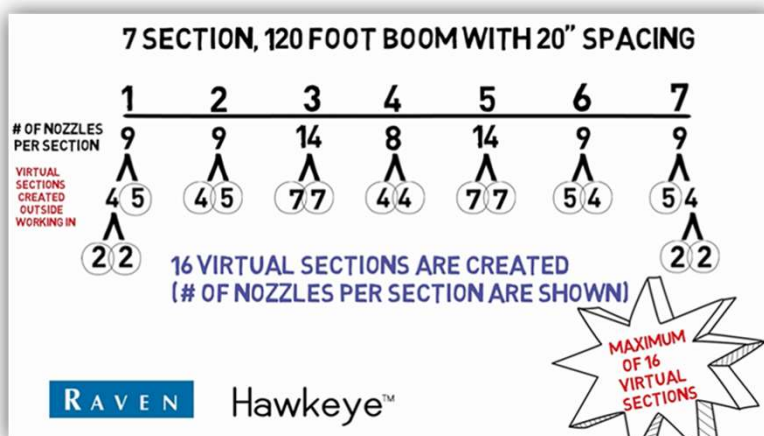
- Hawkeye offers the capability for the operator to enter two different spray pressure set points, and the ability to toggle between those two pressures on-the-go
- Pre-set pressures can be adjusted up or down at any time
- Why would you want pre-set pressure?



RAVEN

14

VIRTUAL SECTIONS



- Virtual section capability
- Up to 16
- Setup wizard makes it simple

RAVEN

15

Hawkeye™ HD

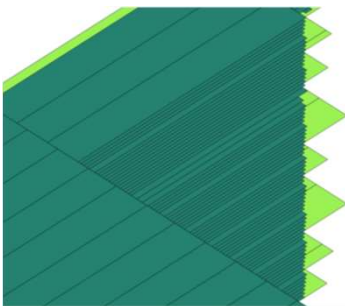
- **Individual nozzle on/off**
- **Provides instant target spray pressure when nozzles are turned on**
- **Software unlock**



RAVEN

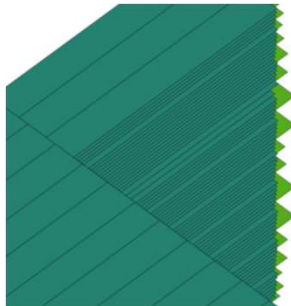
16

Hawkeye™ HD MAPPING



7 SECTIONS

Seven sections on a sprayer are a common base system provided on factory installation



16 SECTIONS

The standard base Hawkeye system along with virtual section unlock provides 16 sections without additional boom valves needed.



72 SECTIONS

Upgrading to Hawkeye HD provides 72 sections reducing the amount of overlap.

RAVEN

17



HAWKEYE HD MAPPING

- Boom status bar shows green/red to indicate on/off
- Individual nozzles painted on Viper 4
- Rate calculated based on individual nozzles
- Coverage area based on individual nozzles
- As-applied map reflects individual nozzle on/off

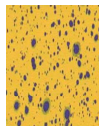
RAVEN

18

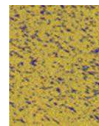
HAWKEYE

PRESSURE CONTROL

With conventional or speed and pressure spraying, pressure control could be difficult to maintain which affects the droplet size.



10 GPA, 5 mph, 10 psi



10 GPA, 10 mph, 40 psi



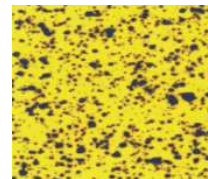
10 GPA, 15 mph, 90 psi

Hawkeye:

Maintains targeted pressure for a consistent droplet size as speed changes

10 gal/acre
40 psi

→ 8 mph
→ 12 mph
→ 15 mph



RAVEN

23

Hawkeye®

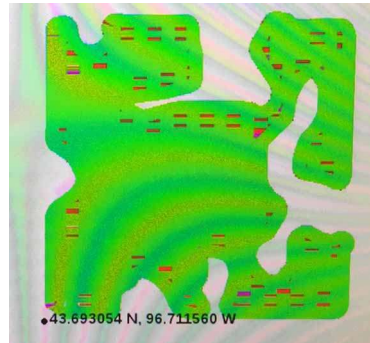
Hawkeye offers higher levels of precision control with up to individual nozzle control.

As an example, the field shown in the map was sprayed using a sprayer equipped with Hawkeye HD:

With 72 sections (nozzle by nozzle):

Boundary Area = 141.6 acres

Applied Acres = 142 acres



RAVEN

24

HAWKEYE ROI



Field Area – 105.1 acres
Field perimeter – 10,376 feet
Unfarmable area – 6.9 acres
Unfarmable perimeter – 10,119 feet

Comparison

120ft boom, 11 sections / 120ft boom, 97 sections (15 in spacing)

Chemical Cost

\$8 per acre = \$.24 savings per acre

\$12 per acre = \$.35 savings per acre

\$15 per acre = \$.53 savings per acre

Time Savings

15 minutes = \$187.50 revenue (based on \$15 hr / 50 ac/hr)

RAVEN

25

WHAT WILL HAWKEYE WORK WITH?

Controller	Virtual Sections	Individual Nozzle On/Off	Direct Injection Compatibility
Raven Viper 4	16	YES (105)	5
Case Pro 700	16	NO	1
NH Intelliview	16	NO	1
Ag Leader	16	NO	TBD
John Deere 2630	16	NO	4



RAVEN

26



Field Computers and
Information Management

Application Controls and
Input Management



Guidance and
Steering

Data
Management



Machine
Controls

Unrestricted
© 2017 Raven Industries, Inc.

RAVEN

27