



## Disease Prevention, Treatment Practices, and Antibiotic Administration Techniques on U.S. Swine Sites

In 2006, the USDA's National Animal Health Monitoring System (NAHMS) conducted a study on swine health and management practices from a random sample of swine production sites in 17 States\*. These sites represented 94 percent of the U.S. pig inventory and 94 percent of U.S. pork producers with 100 or more pigs.

### Disease prevention and treatment practices

In addition to vaccinating for certain pathogens, sites often use treatment regimens of treatments to prevent and control disease at certain management phases. From June through November 2006, 74.7 percent of sites dewormed sows and gilts and 64.0 percent dewormed boars, which accounted for 60.2 percent of total sows and gilts and 67.8 percent of total boars (table 1).

In preweaned piglets, administration of iron was the most common preventive practice (82.1 percent of sites). About 9 of 10 piglets (92.3 percent) were on sites that administered iron at or before weaning. Over 4 of 10 sites (43.5 percent) gave preweaned piglets antibiotics in feed, but fewer than 1 in 10 piglets (8.7 percent) were on sites that administered antibiotics in feed to piglets.

Over 8 of 10 sites (85.3 percent) used antibiotics in feed for nursery pigs, and more than 9 of 10 of nursery pigs (94.9 percent) were on these sites. The use of antibiotics in feed was a more common preventive practice in nursery and grower/finisher pigs than in breeding animals and piglets.

**Table 1. For Sites with the Specified Pig Types, Percentage of Sites (and Percentage of Pigs on These Sites) that Regularly Gave the Following Treatments from June through November 2006**

| Practice                | Percent Sites  |       |          |              |                     |
|-------------------------|----------------|-------|----------|--------------|---------------------|
|                         | Sows/<br>Gilts | Boars | Piglets* | Nur-<br>sery | Grower/<br>Finisher |
|                         | Pct.           | Pct.  | Pct.     | Pct.         | Pct.                |
| Deworm                  | 74.7           | 64.0  | 30.0     | 33.4         | 30.6                |
| Mange/lice treatment    | 46.5           | 43.5  | 23.0     | 24.4         | 12.7                |
| Iron                    | NA             | NA    | 82.1     | NA           | NA                  |
| Antibiotics in feed     | 47.4           | 37.2  | 43.5     | 85.3         | 81.2                |
| Antibiotics in water    | 3.3            | 1.3   | 7.6      | 40.4         | 38.6                |
| Antibiotics (oral)      | 5.0            | 4.8   | 14.9     | 4.2          | 2.8                 |
| Antibiotics (injection) | 47.9           | 27.5  | 54.9     | 53.8         | 56.6                |
|                         | Percent Pigs   |       |          |              |                     |
| Deworm                  | 60.2           | 67.8  | 3.5      | 5.2          | 13.3                |
| Mange/lice treatment    | 13.4           | 44.7  | 1.3      | 2.3          | 3.1                 |
| Iron                    | NA             | NA    | 92.3     | NA           | NA                  |
| Antibiotics in feed     | 38.8           | 30.7  | 8.7      | 94.9         | 86.4                |
| Antibiotics in water    | 2.7            | 0.5   | 2.6      | 76.2         | 65.7                |
| Antibiotics (oral)      | 4.7            | 3.1   | 41.5     | 5.1          | 5.2                 |
| Antibiotics (injection) | 35.6           | 21.2  | 85.6     | 76.4         | 68.4                |

\*Before or at weaning

### Antimicrobial administration techniques

From June through November 2006, 38.5 percent of sites gave breeding females occasional short-term treatments via injections of antimicrobials. Injections were rarely used for occasional short-term prevention (pulse dosing), except for piglets, where 18.8 percent of sites used did use injections.

About one-third of sites delivered antimicrobials via injection to breeding females, piglets, nursery pigs and

#### \*States

Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota Texas, and Wisconsin.

grower/finisher pigs as an occasional short-term treatment.

For nursery pigs, 53.8 percent of sites administered antimicrobials in feed continuously, while 32.8 percent of sites did so for grower/finisher pigs. Nearly three times as many sites delivered antimicrobials in feed to breeding females as an occasional short-term prevention of disease using pulse dosing compared with giving antimicrobials continuously in feed (30.7 and 10.8 percent of sites, respectively). Conversely, for piglets, about one-fifth as many sites delivered antimicrobials in feed to piglets as an occasional short-term prevention of disease using pulse dosing compared with giving antimicrobials continuously in feed (6.0 and 28.4 percent of sites, respectively) [table 2].

**Table 2. For Sites with the Specified Pig Types, Percentage of Sites that Used Antimicrobials in Feed, Water, or by Injection from June through November 2006, by Route of Administration and by Treatment Type**

| Pig Type             | Route     | Percent Sites                   |                                   |                                  |              |
|----------------------|-----------|---------------------------------|-----------------------------------|----------------------------------|--------------|
|                      |           | Treatment Type                  |                                   |                                  |              |
|                      |           | Occasional Short-term Treatment | Occasional Short-term Prevention* | Occasional Individuals or Groups | Continuously |
|                      |           | Percent                         | Percent                           | Percent                          | Percent      |
| Breeding females     | Feed      | 17.3                            | 30.7                              | 7.0                              | 10.8         |
|                      | Water     | 6.8                             | 2.4                               | 3.0                              | 0.1          |
|                      | Injection | 38.5                            | 4.5                               | 35.7                             | NA           |
| Boars                | Feed      | 10.3                            | 15.6                              | 6.1                              | 9.8          |
|                      | Water     | 3.6                             | 0.1                               | 3.2                              | 0.1          |
|                      | Injection | 18.6                            | 1.9                               | 26.1                             | NA           |
| Piglets              | Feed      | 14.7                            | 6.0                               | 4.2                              | 28.4         |
|                      | Water     | 6.7                             | 8.2                               | 3.5                              | 0.9          |
|                      | Injection | 37.3                            | 18.8                              | 39.9                             | NA           |
| Nursery-age pigs     | Feed      | 11.8                            | 34.2                              | 2.1                              | 53.8         |
|                      | Water     | 32.9                            | 21.6                              | 9.0                              | 0.7          |
|                      | Injection | 31.2                            | 4.4                               | 42.6                             | NA           |
| Grower/finisher pigs | Feed      | 31.1                            | 37.8                              | 8.6                              | 32.8         |
|                      | Water     | 41.7                            | 9.2                               | 10.8                             | 0.1          |
|                      | Injection | 30.6                            | 0.6                               | 49.5                             | NA           |

\*Pulse dosing. Increases antibiotic levels in an animal early in the dosing interval, followed by a dose-free period in which antibiotic levels are allowed to diminish until the next dose.

Complete descriptive reports and other information sheets from NAHMS Swine Studies are available at: <http://www.aphis.usda.gov/nahms>

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