

## Supplemental Information— Minute Tidal Volume of Ducks

According to Anderson and Lovo (1964), the respiratory minute volume (RMV) of domestic Pekin ducks ranges from 400-800 mL/minute.<sup>1</sup> According to Bouverot and Hildwein (1978), the mean RMV of domestic Pekin ducks is 815 mL/minute at normoxia.<sup>2</sup> According to Butler and Jones (1968), the mallard and domestic ducks included in the study had a mean resting RMV of 700 mL/minute with a range of 450-880 mL/minute.<sup>3</sup> According to Gillespie et al. (1982), the domestic Pekin ducks used in the study had a normal respiratory minute volume of 750 mL/minute.<sup>4</sup> According to Woakes and Butler (1986), the tufted ducks used in the study had a mean RMV of 267 mL/minute while at rest.<sup>5</sup>

| <b>Source</b>                           | <b>Duck Breed</b>        | <b>RMV</b>     |
|-----------------------------------------|--------------------------|----------------|
| Anderson & Lovo (1964) <sup>6</sup>     | Pekin ducks              | 400-900 mL/min |
| Bouverot & Hildwein (1978) <sup>7</sup> | Pekin ducks              | 815 mL/min     |
| Butler & Jones (1968) <sup>8</sup>      | Mallard & domestic ducks | 700 mL/min     |
| Gillespie et al. (1982) <sup>9</sup>    | Pekin ducks              | 750 mL/min     |
| Woakes & Butler (1986) <sup>10</sup>    | Tufted ducks             | 267 mL/min     |

<sup>1</sup> Anderson HT, Lovo A (1964) The Effect of Carbon Dioxide on the Respiration of Avian Divers (Ducks). *Comp. Biochem. Physiol.* 12: 451-456

<sup>2</sup> Bouverot P, Hildwein G (1978) Combined Effects of Hypoxia and Moderate Heat Load on Ventilation in Awake Pekin Ducks. *Respiration Physiology* 35: 373-384

<sup>3</sup> Butler PJ, Jones DR (1968) Onset and Recovery from Diving Bradycardia in Ducks. *J. Physiol.* 196: 255-272

<sup>4</sup> Gillespie JR, et. al (1982) Respiratory Mechanics of Pekin Ducks Under Four Conditions: Pressure Breathing, Anesthesia, Payalysis, or Breathing CO<sub>2</sub>-Enriched Gas. *Respiration Physiology* 47:177-191

<sup>5</sup> Woakes AJ, Butler PJ (1986) Respiratory, Circulatory and Metabolic Adjustments During Swimming in the Tufted Duck, *Aythya fuligula*. *J. Exp. Biol.* 120: 215-231

<sup>6</sup> Anderson HT, Lovo A (1964) The Effect of Carbon Dioxide on the Respiration of Avian Divers (Ducks). *Comp. Biochem. Physiol.* 12: 451-456

<sup>7</sup> Bouverot P, Hildwein G (1978) Combined Effects of Hypoxia and Moderate Heat Load on Ventilation in Awake Pekin Ducks. *Respiration Physiology* 35: 373-384

<sup>8</sup> Butler PJ, Jones DR (1968) Onset and Recovery from Diving Bradycardia in Ducks. *J. Physiol.* 196: 255-272

<sup>9</sup> Gillespie JR, et. al (1982) Respiratory Mechanics of Pekin Ducks Under Four Conditions: Pressure Breathing, Anesthesia, Payalysis, or Breathing CO<sub>2</sub>-Enriched Gas. *Respiration Physiology* 47:177-191

<sup>10</sup> Woakes AJ, Butler PJ (1986) Respiratory, Circulatory and Metabolic Adjustments During Swimming in the Tufted Duck, *Aythya fuligula*. *J. Exp. Biol.* 120: 215-231