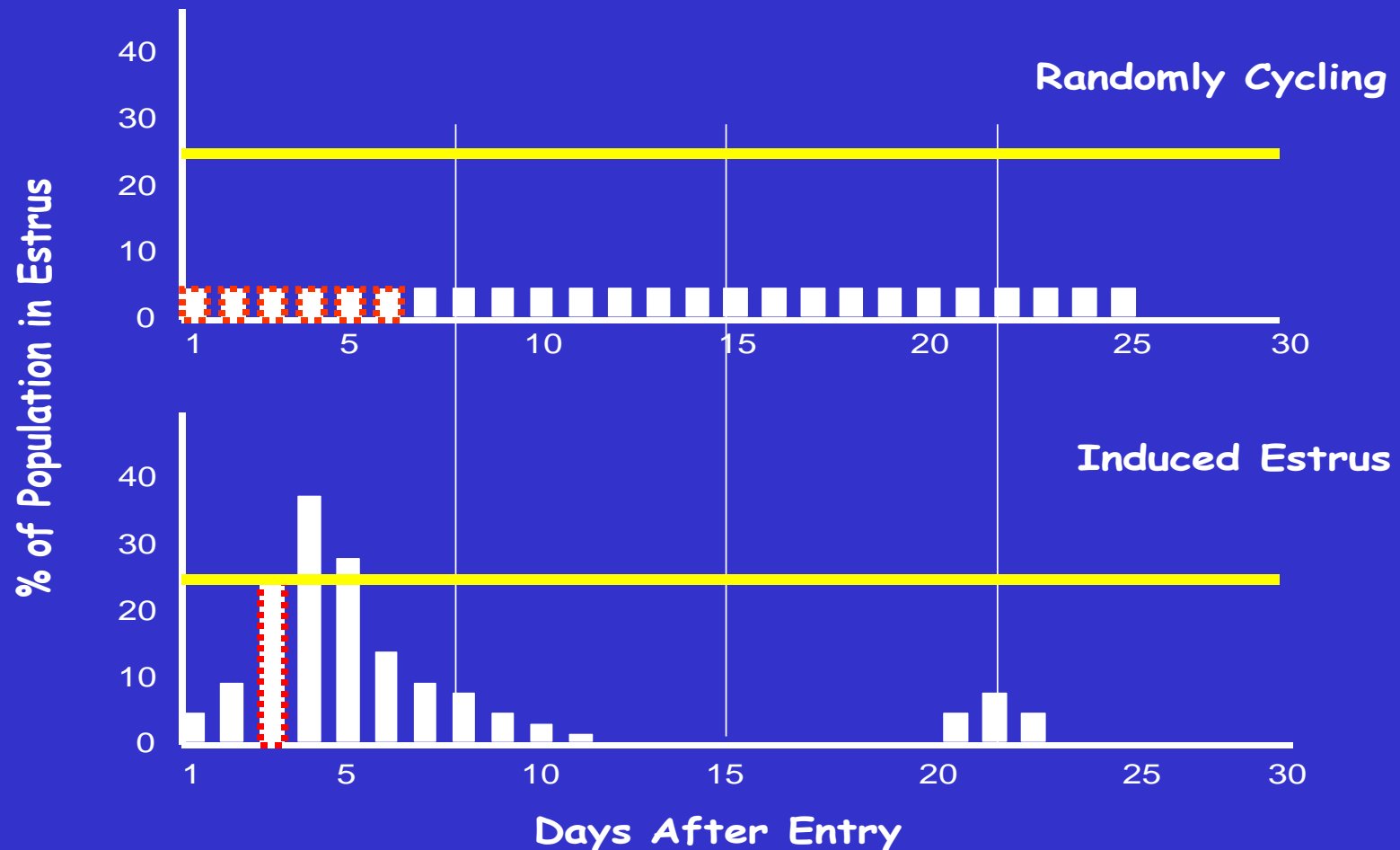


# **Improving Farm Productivity by Managing Gilt Cycling**

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**David K. Bishop**  
**Reproductive Design Services**

# Scenarios of Estrus in Gilts

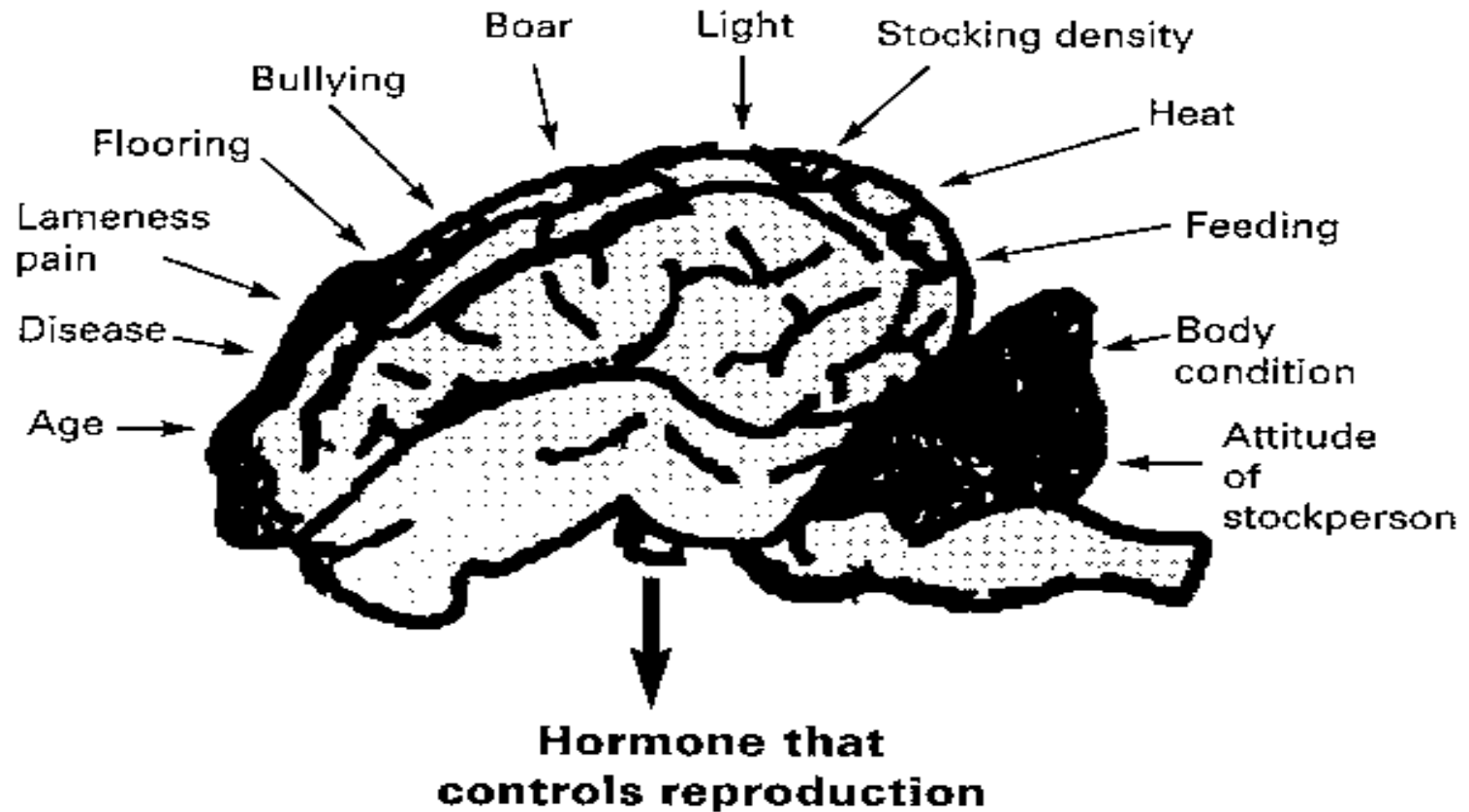


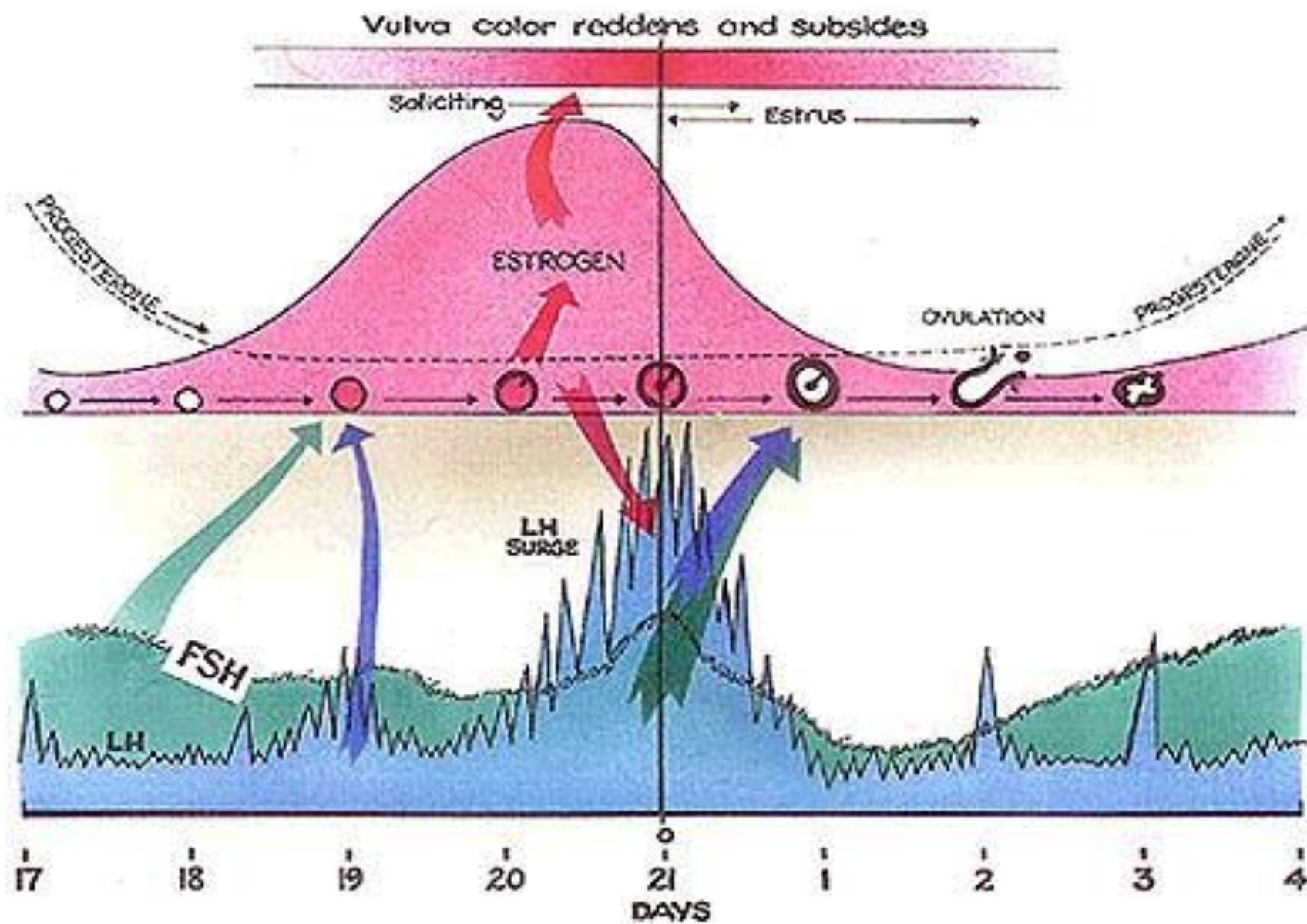
# Challenges from Natural Stimulation

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- ◆ Variance to breeding targets
  - Parity distribution = Bimodal due to group-group variation
  - Excessive Gilts bred in Good Seasons, etc.
  - Overpopulation to make Summer breeds
  - Excessive P1 females in Summer
  - Variable Farrowing performance
- ◆ Weekly Variation in Pigs

# Management Influences





# Additional "Production Tools"

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## ◆ PG 600®

- ≈ Serum gonadotropin (PMSG) 400 I.U. (FSH like)
- ≈ Chorionic gonadotropin (HCG) 200 I.U. (LH like)
- ≈ Single or 5 dose vials - 5 ml dose

## ◆ Matrix®

- ≈ Altrenogest (2.2 mg/ml) applied to feed 15 mg/hd/day for 14 days (Progesterone)



# The effect of P.G. 600<sup>®</sup> on gilt pool

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<b>Response: Days post- treatment</b>	<b>% Control</b>	<b>% PG 600</b>	<b>Replace factor control</b>	<b>Replace factor PG600</b>
<b>5</b>	<b>25</b>	<b>52</b>	<b>4.00</b>	<b>1.92</b>
<b>10</b>	<b>41</b>	<b>59</b>	<b>2.44</b>	<b>1.69</b>
<b>14</b>	<b>45</b>	<b>63</b>	<b>2.22</b>	<b>1.59</b>
<b>21</b>	<b>52</b>	<b>67</b>	<b>1.92</b>	<b>1.49</b>
<b>28</b>	<b>58</b>	<b>73</b>	<b>1.72</b>	<b>1.37</b>

Knox, et al

# Body weight and P.G.600® on the estrus response

(Britt et al. 1989, Tech. Report 2)

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	Heavy	Light
Estrus detection rate, %	84.2	70.2
Interval to estrus, d	6.3	7.6

Weight range from 190 - 350 lbs.

678 gilts in NC, IL, MO

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**Health status?**

**Water vs discharges**

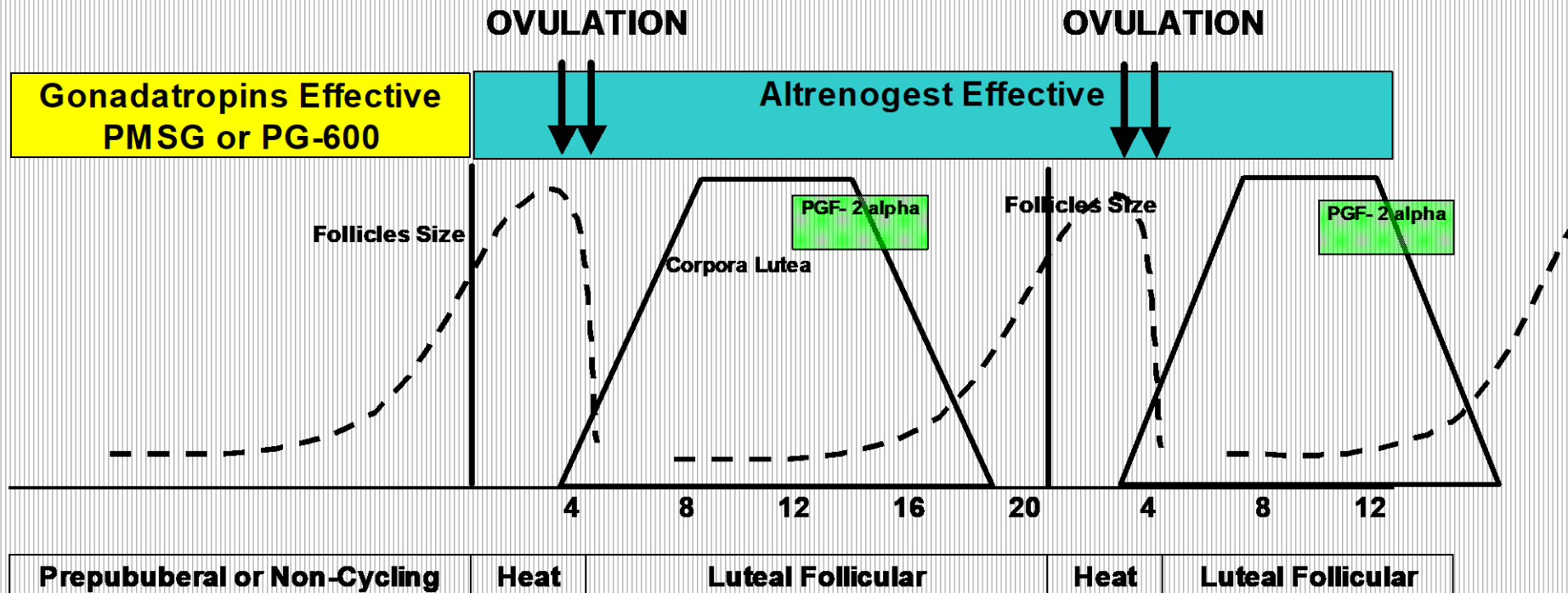


# Recommendations: P.G. 600®

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- ◆ Evaluate Gilts cycling by 5 days post-delivery
- ◆ > 10% decrease = short-circuit of program
- ◆ That week:
  - Begin programming 50% of Breeds/wk
  - Monitor HNS success
  - Adjust injections to response
  - Consider Matrix to adjust responses
- ◆ Later and maintenance:
  - "Knothead" program (Day 21 post-delivery)
- ◆ Never give 2<sup>nd</sup> Shot without planning

# Matrix<sup>®</sup> for Cycling Gilts

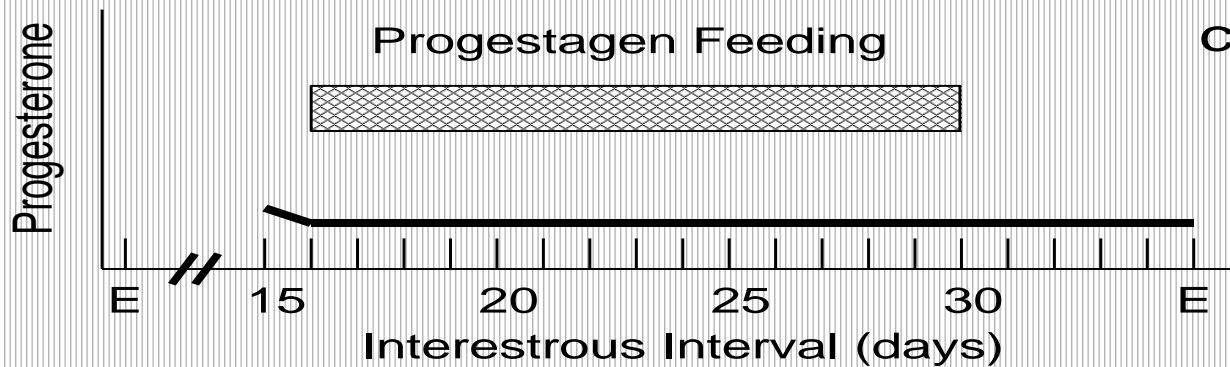
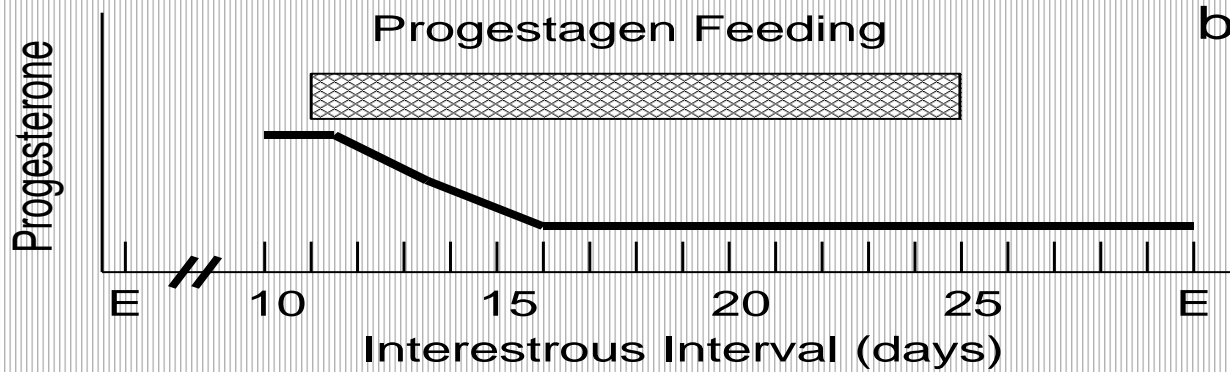
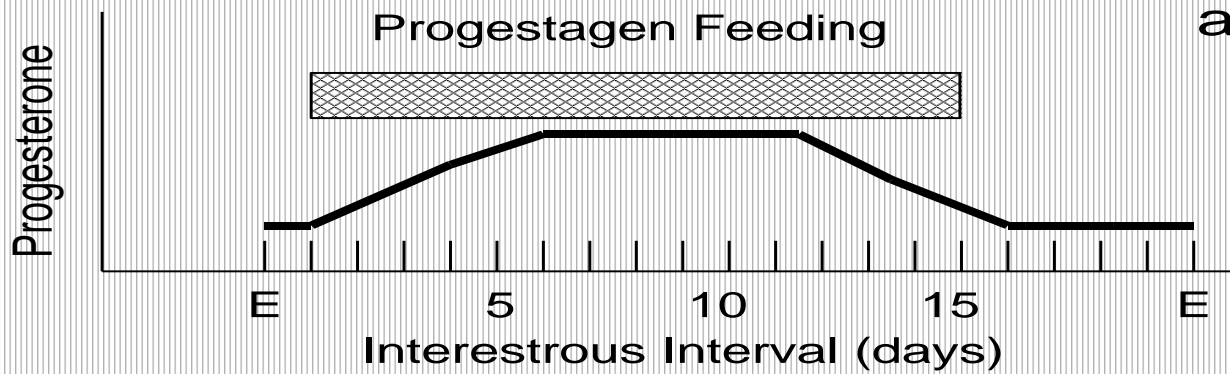


Source: National Hog Farmer, Blueprint Series- Spring 1988

# Natural Inhibition of Follicular Development

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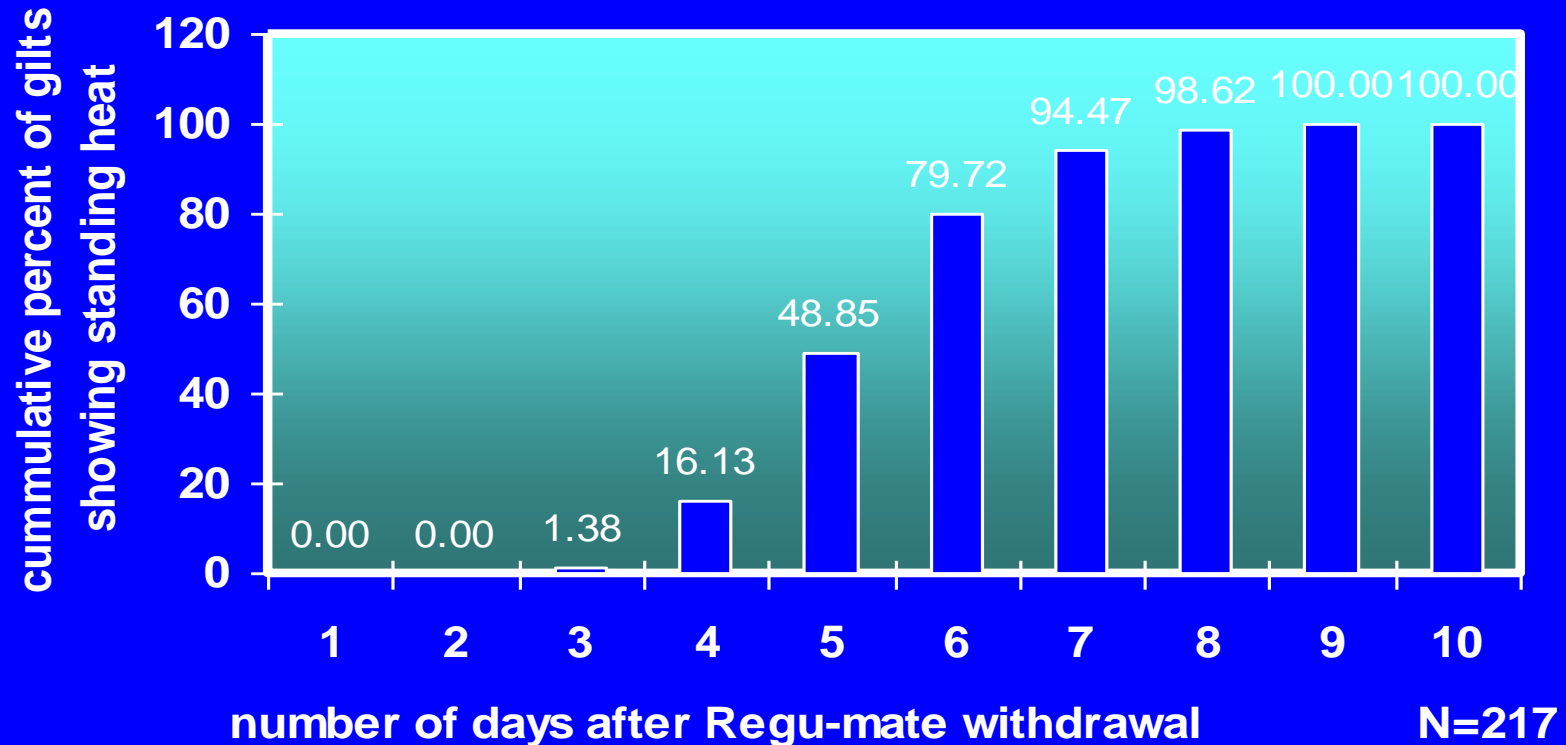
- ◆ Some situations in which the sow doesn't want to express estrus or be bred - pregnancy
- ◆ Allows time for recovery of reproductive system - lactation
- ◆ Recovery from "stressors" which disrupt homeostasis- nutritional deficit
- ◆ Monitoring of "potential" maintenance of pregnancy - environmental



Courtesy  
W. Flowers

# Cumulative percentage of gilts in estrus after Regumate withdrawal.

Foxcroft, et al



# Fertility following synchronization of estrus with Altrenogest

<b>Treatment</b>	<b>Number of Animals</b>	<b>Percent Farrowed</b>	<b>Litter Size</b>	<b>Trials*</b>
<b>Control</b>	<b>520</b>	<b>74</b>	<b>9.1</b>	<b>5</b>
<b>Altrenogest (20 mg)</b>	<b>521</b>	<b>81</b>	<b>9.9</b>	
<b>Control</b>	<b>516</b>	<b>66</b>	<b>9.0</b>	<b>11</b>
<b>Altrenogest (15 mg)</b>	<b>545</b>	<b>72</b>	<b>9.7</b>	
<b>Control</b>	<b>151</b>	<b>68</b>	<b>9.6</b>	<b>Confirmation</b>
<b>MATRIX (15 mg)</b>	<b>144</b>	<b>85</b>	<b>9.5</b>	<b>Study</b>

\*Compilation of 16 Published reports and Matrix Study

**Review by Webel, 2004**

# Recommendations: Matrix®

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- ◆ Events 11 days prior to service are important
- ◆ Matrix fed for 14 days
- ◆ Mandatory daily dosing- (off-feed = ??)
- ◆ Dose concentration as titrated (15 mg/hd/d)
- ◆ Most effective for mature cycling gilts
- ◆ Not effective in prepuberal or anestrus gilts

# Summary: Pro-active to Cycling Gilts

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- ◆ Cycling gilts maintain in heat better than prepuberal counterparts
- ◆ If cycling 14/21 days are controlled
- ◆ Feed for Cycles 1<sup>st</sup>
  - Structure disadvantages 2<sup>nd</sup>
  - Embryonic loss = ??
- ◆ Keep the gilts already "paid for"
- ◆ Program breeds on cycling females