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HABROBRACON EXPERIMENT P-1079

QUARTERLY PROGRESS REPORT

TO THE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

October 1 - December 31, 1967

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BIOLOGY DIVISION

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OAK RIDGE NATIONAL LABORATORY
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U.S. ATOMIC ENERGY COMMISSION

QUARTERLY PROGRESS REPORT
TO THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Title of Project:

Mutagenic Effectiveness of Known Doses of Gamma Radiation in Combination with Weightlessness on Habrobracon

For the Period:

October 1 - December 31, 1967

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P-1079

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I. INTRODUCTION

R. C. von Borstel Roger H. Smith

The preliminary analysis of the Habrobracon portion of the Biosatellite II experiment is presented in this report. It is a preprint of the article that subsequently appeared in BioScience (von Borstel, Smith, Grosch, Whiting, et al., 1968).

Besides this, a final analysis has been made of the fertilizing capacity of sperm from males that had been in the Biosatellite. Presented is evidence that the effect found (enhanced fertilizing capacity) is a true effect of weightlessness in combination with radiation and is not attributable to some other condition of space flight.

The computer program has been modified and brought up to date. The program as now used is included.

A summary of the data used for estimating the mutation parameter of dominant lethality in Habrobracon sperm is also included. An analysis of these data will appear in a later report, after the dosimetry has been completed.

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von Borstel, R. C., R. H. Smith, D. S. Grosch, A. R. Whiting, R. L. Amy, M. B. Baird, P. D. Buchanan, K. T. Cain, R. A. Carpenter, A. M. Clark, A. C. Hoffman, M. S. Jones, S. Kondo, M. J. Lane, T. J. Mizianty, M. L. Pardue, J. W. Reel, D. B. Smith, J. A. Steen, J. T. Tindall, and L. R. Valcovic, 1968, Mutational response of Habrobracon in the Biosatellite II experiment, BioScience 18: 598-601.

II. MUTATIONAL RESPONSE OF HABROBRACON IN THE BIOSATELLITE II EXPERIMENT

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The Biosatellite Habrobracon experiment was designed to survey mature sperm and all different stages of oogenesis for mutational effects, particularly dominant lethality, recessive lethal and visible mutation frequencies, and inherited partial sterility. These were scored at all stages of the life cycle and all are total genome effects. Additional data were collected and are being accumulated on survival, life span, and biochemical and behavioral differences of the animals themselves.

Since each Habrobracon requires careful attention, the experiment was planned so that many Habrobracon investigators from several different institutions would work in concert for a limited time before, during, and after the flight. In this way the information could be obtained at lowest cost from the unique experience.

Experimental Design and Methods

Two hundred seventy-eight males of the lemon mutant strain and 280 females heterozygous for lemon, honey, and cantaloup markers were placed in five polypropylene packages designed for them. Three ground-based controls included: an exact mock-up of the spacecraft with a radiation source (Control I), a ground-based control incubator set at a constant temperature (Control II), and a ground based control incubator designed to follow by 1 hr the temperature profile of the spacecraft (Control III).

The five packages in the spacecraft and in the ground-based controls were placed relative to the 85-strontium source so that the Habrobracon would receive γ-radiation exposures of 4000 R, 2000 R, 1000 R, 500 R, and 0 R. These exposures were not approximated for several reasons: the flight duration was shortened; the 1000 R nominal-exposure package was tilted in the spacecraft; dose-square relations were not accurately observed when the spacecraft was designed; and there was an undetermined amount of low energy scattered radiation. Geometric corrections have not yet been established. Thus, the true values for the exposures received by the Habrobracon are not now known to within 15%. Packages in the spacecraft received exposures of ~2400 R, ~1200 R, ~600 R and ~530 R, ~350 R, and ~0.5 R. Packages in the ground-based control setup received ~2400 R, ~1200 R, ~700 R, ~360 R, and ~1.5 R. The bracket holding the 1000 R nominal-exposure package in the spacecraft had been turned, inadvertently, 180° during spacecraft assembly so that the package was tilted facing upward at an angle of approximately 30° away from the source. This error was not noted or corrected during assembly of the spacecraft. It was detected post-flight when the Toshiba glass rod dosimeters and LiF powder were being measured. The error was verified by examination of photographs taken during the disassembly of the spacecraft.

Two radiation experiments were performed. Some Habrobracon were irradiated prior to launch, some of them were irradiated during the flight, and some were not irradiated at all. The Habrobracon irradiated before launch were given 2000 R at a rate of exposure of 120.4 R/min. The rates of exposure for those irradiated during the flight were much lower.

Analysis of the males followed established procedures of von Borstel and Rekemeyer (1959) for dominant lethality, recessive lethality, and inherited partial sterility. Analysis of the females followed the procedures of Whiting, Smith, and von Borstel (1968) for total dominant and recessive lethality induced during oogenesis, and of Grosch (1968) for oogonial killing and dominant lethality.

A disassembled package for Habrobracon is shown in Fig. 1. The same package, in different degrees of assembly, is shown in Figs. 2 and 3. Three of the packages are like the one shown in the figures. The 4000 R nominal-exposure package has a concave face for placement of the modules containing the Habrobracon to ensure adherence to the isodose requirements. The 0 R nominal-exposure package holds multi-layered modules so that more Habrobracon could be contained. Some of the Habrobracon in this package were irradiated before the launch.

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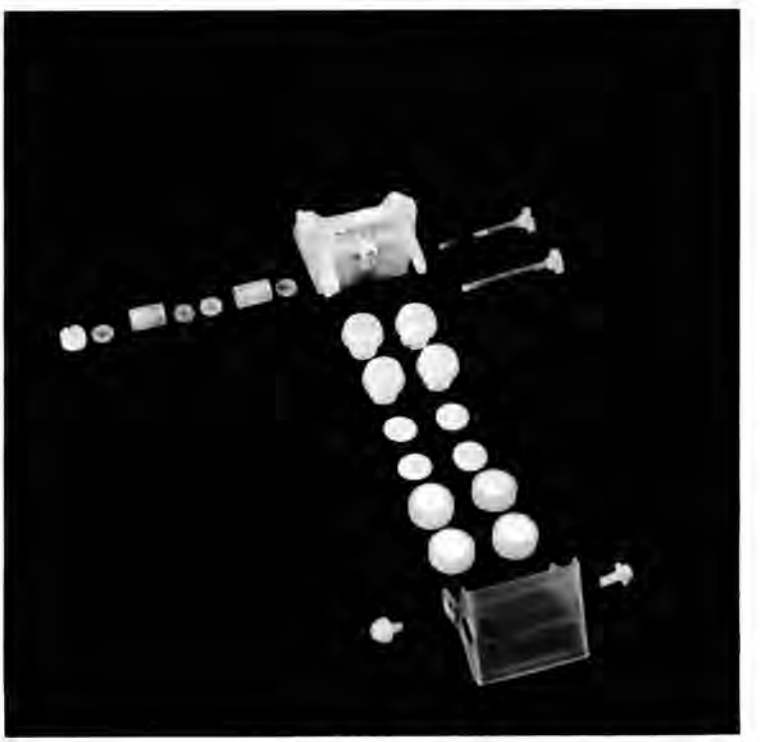

Fig. 1. A Disassembled Flight Package Used for the Habrobracon Portion of the Biosatellite II Experiment.

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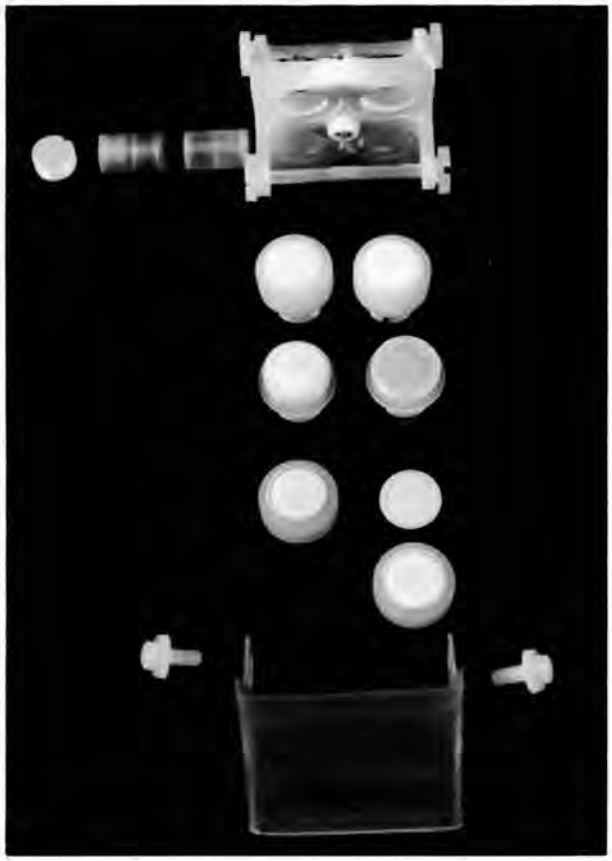

Fig. 2. A Partially Assembled Flight Package.

The tubes for lithium fluoride powder are in place on the bracket, two of the modules are capped, one of the modules has a screen overlying the depression where the Habrobracon are held, and the other module is still disassembled.

AR-1632B-P1079-5

Fig. 3. A Partially Assembled Flight Package.

The modules and tubes for lithium fluoride powder are in place. The secondary electron equilibrium shield lies in front of the rest of the package.

The Habrobracon were held in four modules which, in turn, were screwed on the part of the package facing the radiation source. These are identified by their position facing the source; i.e., LR is lower right, UL is upper left, etc. Each module also carries three Toshiba glass rod dosimeters. Additional dosimetry was accomplished by placing LiF powder in tubes held in front and behind the modules. A thermistor to record the local temperature is located centrally between the modules.

Results

Numerical data are still being accumulated; in this report, only qualitative results are presented. Every animal survived the experience of the flight. Males that had been in orbit were disoriented in their mating behavior for 2 days after their flight. In contrast, the females from the spacecraft were not disoriented in their complex egg-laying and feeding reactions.

Sperm. The exposure-hatchability curve of fertilized eggs following irradiation of sperm in the flight vehicle and in ground-based controls is shown in Fig. 4. It can be seen that there is no significant difference between the flight and ground-based control animals. The differences among the modules are small, verifying the essential similarity of replicate modules at each exposure. Flight conditions neither enhance nor antagonize the effect of radiation on sperm dominant lethality. The spontaneous recessive embryo lethal mutation frequencies in sperm were also the same in the spacecraft and the ground-based control setup. The recessive lethal mutation frequencies and frequencies of inherited partial sterility induced in sperm by the radiation are still under analysis.

Metaphase I oocytes. Exposure-hatchability curves of eggs irradiated during the first meiotic metaphase are shown in Fig. 5. Since the females were virgins, dead embryos are due to either dominant or recessive lethal mutations or both. There is a marked difference in radiation sensitivity between eggs irradiated in the spacecraft and those on the ground. In the orbiting samples, there were differences from module

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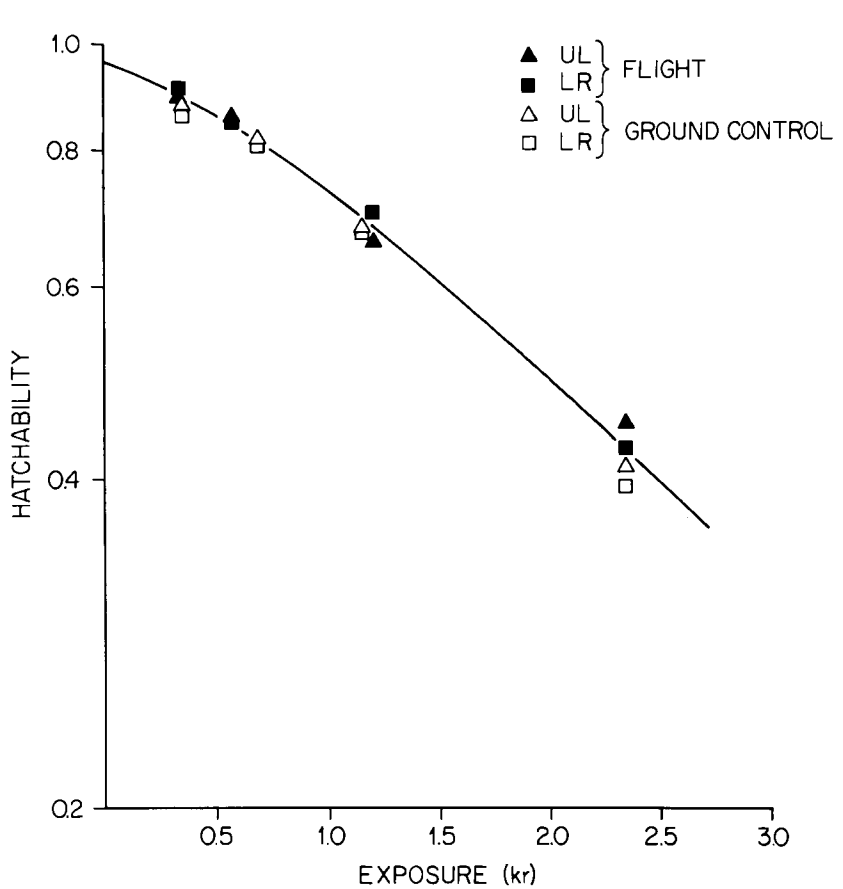

Fig. 4. The Hatchability of Fertilized Eggs from Females Mated to Males Irradiated in the Spacecraft and the Ground-Based Control Setup

UL= Habrobracon from upper left modules; LR= Habrobracon from lower right modules.

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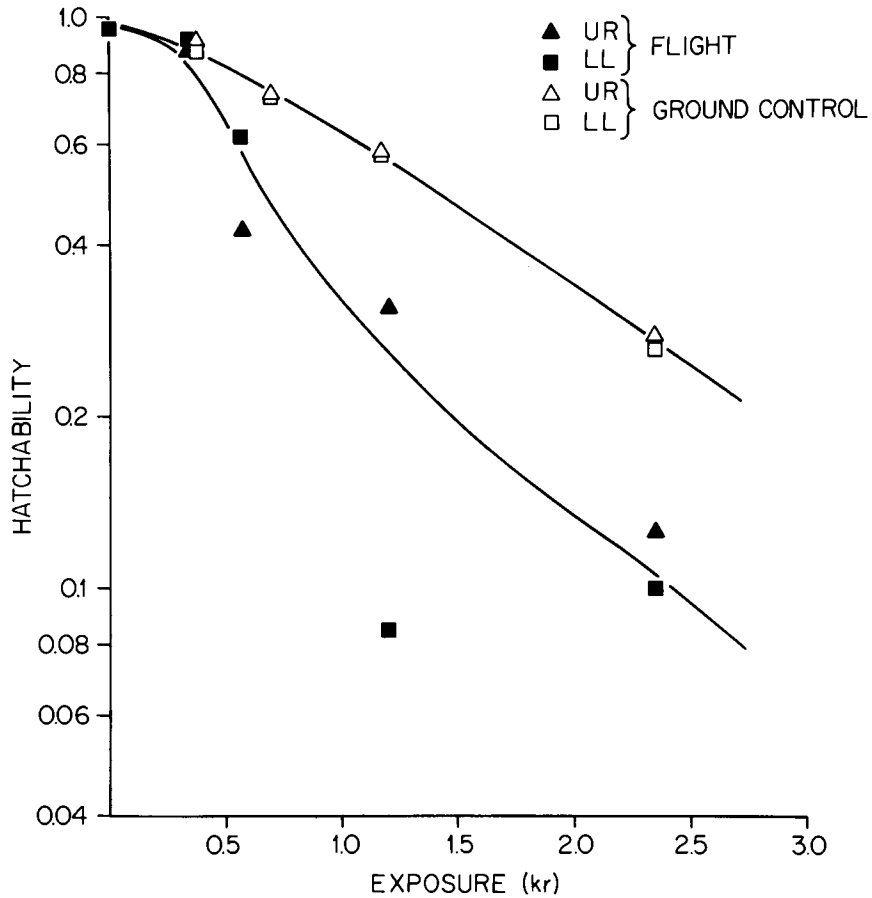

Fig. 5. The Hatchability of Unfertilized Eggs from Virgin Females Irradiated in the Spacecraft and the Ground-Based Control Setup.

The eggs represent the class that was in the first meiotic metaphase at the time of irradiation. UR = Habrobracon from upper right modules; LL = Habrobracon from lower left modules.

to module. It appears that flight conditions enhance the effect of γ-radiation in producing lethality in metaphase I oocytes.

With those metaphase I oocytes irradiated with an acute exposure of 2000 R prior to the time of flight, a similar difference was found between eggs flown in the spacecraft and eggs held in the ground-based controls. The eggs from these females, however, had higher hatchabilities than any of those irradiated during the flight. Recovery from the radiation damage to these eggs (and to those under irradiation) must have been occurring during the flight.

Prophase I oocytes. The eggs laid on the second day after the flight had terminated are from a homogeneous class of large, nearly mature oocytes that were in the diplotene state of meiosis during the flight. At the radiation exposures used, hatchability was above 90%. Genetic recombination in chromosome I is not affected by low doses of radiation during prophase I. We anticipated no difference, and none was observed as a result of space flight.

The eggs laid on the third day after the flight had terminated were small oocytes during the flight.* They were no larger than the nurse cell mass with which they were in contact. Yolk synthesis, transport, and deposition are in progress in oocytes of this size. These oocytes responded like the metaphase I oocytes in that there was a large sensitivity difference between those irradiated in the spacecraft and those on the ground, those in the spacecraft being more sensitive.

Transitional and primitive oogonia.* Reproductive performance of the females was the principal criterion for effects on these stages. The pattern of egg production for the Habrobracon females recovered from the spacecraft differed drastically from results obtained with females in the ground-based controls. Normally, after the first 3 days, a group of irradiated females will begin to produce fewer eggs than an unirradiated group. The irradiated group will go through a low period from 5 (acute irradiation) to 8 or 9 (protracted irradiation) days after being treated. The egg production then goes up, but never to the level of the control.

*Principal responsibility of the group from North Carolina State University.

The ground-based control females behaved as expected, but those from the spacecraft showed a compensatory pattern of egg production. Although egg production was slightly lower for irradiated flight females than the ground and flight unirradiated controls (0 R) for the first week, the egg production was higher than the 0 R controls for the remaining portion of the 20-day study.

The data for females irradiated in the nominal 4000 R position (receiving approximately 2400 R in this flight) are shown graphically in Fig. 6. There is an antagonistic effect of space flight with radiation in oogonia. The radiation response of these mitotically reproducing cells is effectively eliminated by the flight.

Life span.* Although a comparison of individual dose levels shows no impressive statistical differences, a significantly longer life span of females from the satellite can be shown in pooled data when compared to those of the ground control.

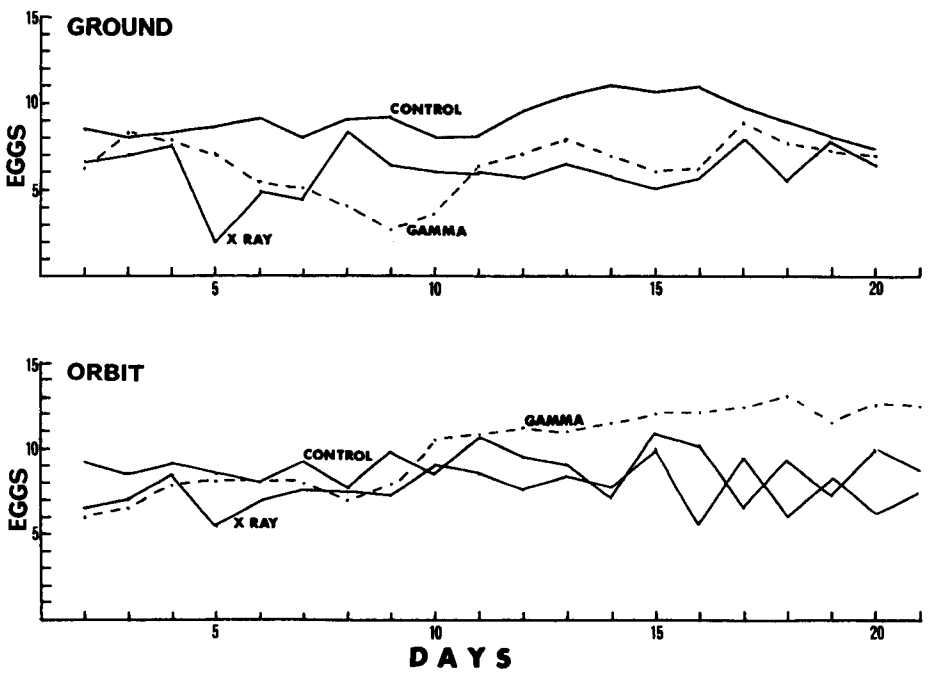

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Fig. 6. Mean Daily Egg Production for Samples of Habrobracon Virgin Females from the Spacecraft and the Ground-Based Control Setup.

In each case, the curves have been drawn for unirradiated controls, for females receiving an acute pre-flight exposure of 2000 R of X-radiation, and for females receiving ~2400 R of γ-radiation during the flight itself.

Discussion

Null, enhancing, and antagonistic effects of the space flight with radiation were found in the Habrobracon experiment.

Our results to date indicate no effect of space flight on radiation damage to mature sperm. Sperm are static, fully differentiated cells in which radiation-repair systems are slightly, if at all, operative, even under normal conditions. Space flight seemed to enhance the effect of radiation on meiotic cells which are static but in which repair systems are operative; space flight appeared to antagonize the effect of radiation on mitotic cells and on cells transitional between mitosis and meiosis in which repair systems are also operative.

The differentiation of oogonia into meiotic oocytes is a complex process. These cells, which form a sequential series, are metabolically active but are in different metabolic states. The patterns of response of these cells, in terms of fecundity and fertility, differ for radiation and for a variety of chemical agents (Grosch, 1963). It should not be entirely unexpected to find that meiotic and mitotic cells respond in different ways to space-flight factors.

Even though the effects of space flight are probably complex, one can speculate about the possible targets within these different cell types.

First, the radiation-repair systems may be different in meiotic and mitotic cells. In the meiotic cells the repair system is inhibited by space-flight factors; in mitotic cells the repair system is "stimulated" or unmasked to a greater extent. Perhaps in space the mitotic cells respond by being slowed in the cell cycle so that repair can be effected over a longer period of time.

Second, broken ends of chromosomes undergoing meiosis may move further apart so that they have difficulty in rejoining, whereas broken chromosome ends in the transitional cells or in interphase oogonia are packed more closely together and can rejoin more readily. This hypothesis can be stated as an expansion or contraction of the chromosome-rejoining sites in different cell types by space-flight factors.

A third possibility is that cells may metabolize faster in the ground-based controls than in the flight vehicle. A case could be made to explain the enhancing and antagonizing effects by resorption of the eggs and their replacement by differentiation of gonial cells. The sperm would, of course, remain equally viable under both conditions. Lower temperature in the flight vehicle would not be a plausible reason for a lower metabolic rate since hourly measurements of temperature in the spacecraft and the ground-based controls gave almost identical readings.

These hypotheses are not necessarily mutually exclusive, nor are they the only possibilities that come to mind. They are reasonable and consistent with our findings to date.

It is plausible that neither weightlessness nor vibration (or other flight factors) alone could cause the biological effects noted. A case can be made that the interactions of weightlessness together with one or more of the other factors is essential. For example, vibration could dislocate components of a cell, and a gravity-free state could keep the components from settling back to an earth-bound position within the cell.

Summary

When dominant lethality in Habrobracon sperm was the criterion, no interaction effects of γ-radiation and space flight were found. When dominant and recessive lethality in Habrobracon oocytes in the first meiotic metaphase was the criterion, a marked enhancing effect of radiation in space flight was found. The late prophase I oocytes were insensitive, but the small prophase I oocytes were similar to metaphase I oocytes in exhibiting an enhancing effect of radiation during space flight. When killing of transitional and primitive oogonia was measured by fecundity, a marked antagonistic effect of radiation by space flight was found. The enhancing and antagonistic effects were observed whether the Habrobracon were irradiated either before or during the flight, although the effect was greater in those Habrobracon irradiated during the flight.

Acknowledgments

We want to acknowledge the willing support and unstinting helpfulness of everyone associated with this experiment from our own laboratories and universities directly involved with the Habrobracon experiment as well as General Electric Corporation, Union Carbide Corporation, Ames Research Center, Cape Kennedy Operations, the United States Air Force at Hickam Field, the University of Hawaii, the University of California, the Atomic Energy Commission, and the National Aeronautics and Space Administration. This gives but small indication of the extraordinary amount of planning and programming needed to make the experiment possible.

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Whiting, A. R., Roger H. Smith, and R. C. von Borstel, 1968, Methods for radiation studies during oogenesis in Habrobracon juglandis (Ashmead), in Symposium on Effects of Radiation in Meiotic Systems, International Atomic Energy Agency, Vienna, pp. 201-208.

III. FERTILIZING CAPACITY OF SPERM FROM MALES IN THE BIOSATELLITE II EXPERIMENT

Roger H. Smith Diana B. Smith

After the Biosatellite II was recovered, it was found that Habrobracon males from the flight had an abnormal mating behavior (Valcovic et al., 1968). This was the first observed difference between the animals in the spacecraft and in the ground-based control setup. An obvious follow-up was to compare the frequencies of fertilized eggs from these matings.

Results

The computer prints out the proportion of nonfertilized eggs and their confidence limits (von Borstel et al., 1968). We have revised these data to show the proportion of fertilized eggs from the sperm of males in the spacecraft and in the ground-based control setup (Table 1).

Except for males that received low doses or were irradiated before the launch, it can be seen that the males carried in the spacecraft consistently had a higher fertilizing capacity. An exposure-action curve is shown in Fig. 7 which compares the estimated proportion of diploid eggs at each exposure. The proportion of surviving females from all adults is shown in Fig. 8.

Discussion

Figure 8 shows best the constant superiority of the fertilizing capacity of the males which had been in the spacecraft. Since the effect is related only to higher exposures received in orbit, the increased fertilizing capacity of the sperm appears to be an enhancing effect of radiation combined with weightlessness.

Summary

Although males carried in the spacecraft showed a general inability to mate, their sperm had an increased fertilizing capacity, but only after receiving radiation in flight.

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von Borstel, R. C., Roger H. Smith, Anna R. Whiting, Katherine T. Cain, Joan W. Reel, Martha S. Jones, Margaret J. Lane, Judith A. Steen, Julie T. Tindall, and Diana B. Smith, 1968, Dominant lethality in Habrobracon sperm in the Biosatellite II experiment, ORNL-TM- 2312, Quarterly Progress Report to NASA covering the period October 1-December 31, 1967, pp. 23-25 (Section V, this report).

Table 1. Frequency of eggs fertilized by males from the spacecraft and the ground-based control setup

Nominal Exposure (R)	Estimated Exposure (R)	Package	Diploid Eggs (%)	Female Adults (%)
4000	2540	FLT	59.94	42.15
	2550	GC1	57.72	37.95
2000	1272	FLT	66.04	57.40
	1246	GC1	56.29	48.01
1000	590	FLT	68.50	64.39
	724	GC1	58.41	54.91
500	356	FLT	64.79	60.22
	371	GC1	62.10	59.35
0	0.7	FLT	65.82	63.77
	1.7	GC1	62.51	62.82
pre-2000	2000	FLT	58.66	45.87
		GC1	61.51	46.43
pre-2000	2000	GC3	65.75	47.81
		pretest	53.04	39.75

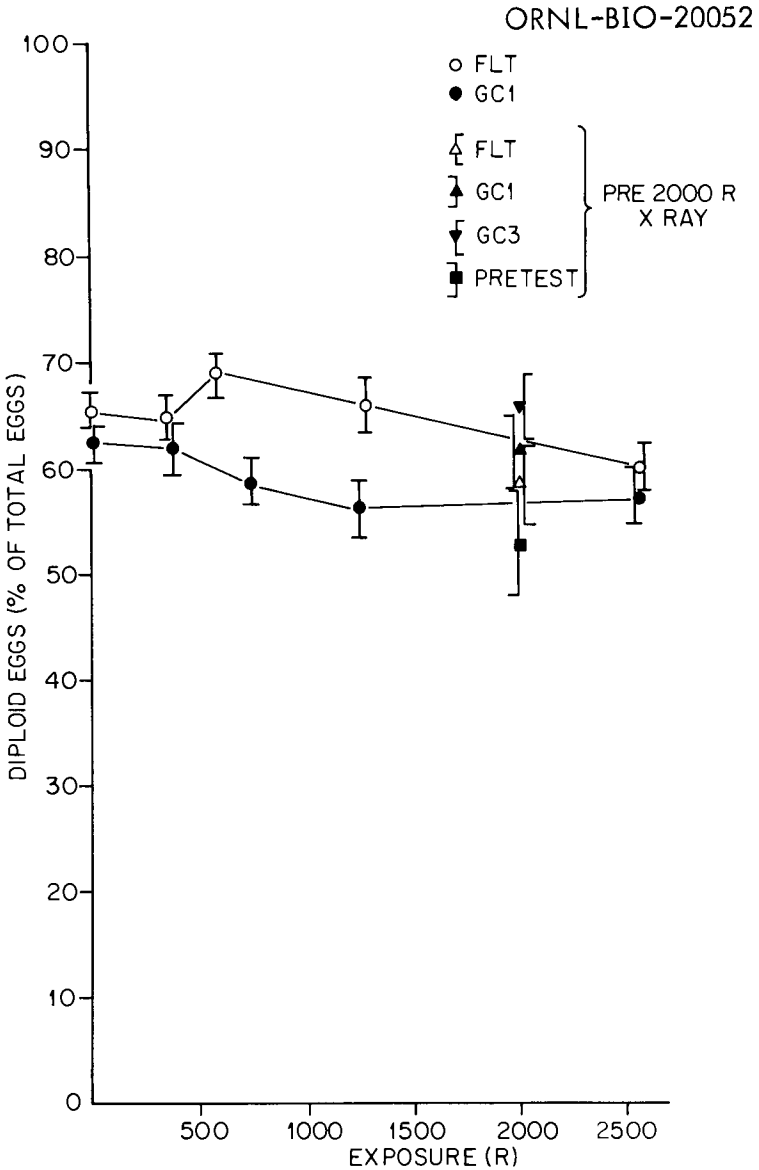

Fig. 7. The Dose-Fertilization Frequencies of Habrobracon Males in the Biosatellite II Experiment

The frequency of fertilization is shown as an estimate of the proportion of diploid (fertilized) eggs.

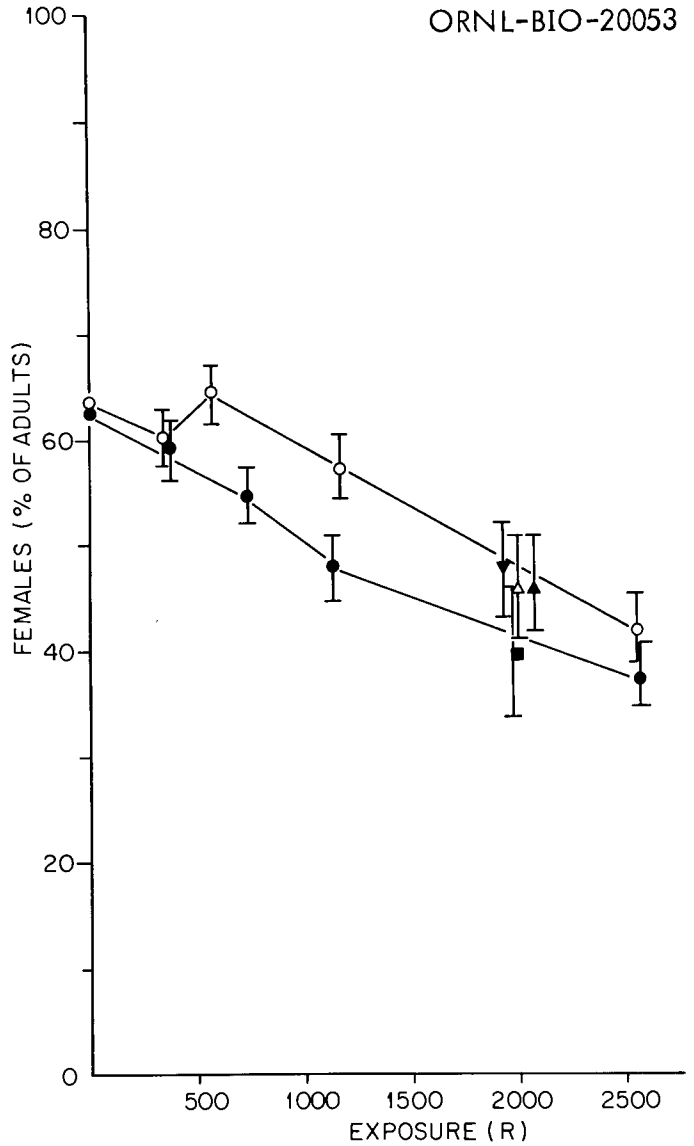

Fig. 8. The Dose-Fertilization Frequencies of Habrobracon Males in the Biosatellite II Experiment

The frequency of fertilization is expressed as the proportion of female offspring among all adult offspring.

IV. COMPUTER PROGRAM AND SUBROUTINES FOR ANALYSIS OF HABROBRACON DATA

Diana B. Smith Roger H. Smith

A program was devised to handle the large amounts of data accumulated in the Biosatellite Project (Smith and Smith, 1967). This has been revised to include computation of confidence limits. Also, the sex ratios of the eggs (primary sex ratio) are computed, and the adults (secondary sex ratio) are presented.

The program is shown in sequence on the following pages (pp. 17-22).

Literature Cited

Smith, D. B., and R. H. Smith, 1967, Computer tabulation and analysis of data, ORNL-TM-1732, Quarterly Progress Report to NASA covering the period July 1-September 30, 1966, pp. 9-15.

```
**FTN,L,P,E.
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     *,4H  5 ,4H  N ,4H  E ,4H  M ,4H  L ,4H SL ,4H  P ,4H  E ,4H  M ,
     * 4H  L ,4H    ,4H    /
      DATA ICCN/4H  D /
      DIMENSION VIRG(22),WENCH(22),S(22),F(22),X(22)
      DIMENSICN ILIST(20),LIST(20)
      DIMENSION IX(2),ID(2)
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  200 FORMAT(1H0,I3,1X,I3,22F5.0,I5)
  300 FORMAT(1H0,120X,5HERROR)
  400 FCRMAT(1H1,15HUNMATED FEMALES,F7.0///)
  500 FORMAT(1H0,5X,A4,5X,F8.0,5X,F8.6)
  600 FORMAT(1H0,7H  B   F,20A5,13X,1HT)
  700 FORMAT(1H1,15H  MATED FEMALES,F7.0///)
  800 FORMAT(1H1,18HDOMINANT LETHALITY,20X,F8.0,16H UNMATED FEMALES,10X,
     * F8.0,14H MATED FEMALES///)
  808 FORMAT(7A4,A3,A4,A3,A1,A2,A1,6A4,3A2)
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   88 FCRMAT(1H0,'FEMALE NOS',T15,'SEX')
  888 FCRMAT('0',A4,A3,T15,A1,T20,A2,T27,A1,//)
   77 FORMAT(1H0,'STOCKS',T10,'TREATED',T20,'MATED TO')
  777 FORMAT(1H0,T10,2A4,T20,2A4,T30,2A4,//)
      REWIND 10
      REWIND 11
 3000 READ(50,808,END=4000) LIST
      PRINT 99
      PRINT 999,(LIST(I),I=1,8)
      PRINT 88
      PRINT 888,(LIST(I),I=9,11)
      PRINT 77
      PRINT 777,(LIST(I),I=14,19)
      PRINT 600,ILIST
      DO 1 I=1,22
      VIRG(I)=0.
    1 WENCH(I)=0.
      CNT1=0.
      CNT2=0.
      READ(50,100,END=4000) IX,(S(I),I=1,22)
    2 ID(1)=IX(1)
      ID(2)=IX(2)
      NT=0
      DO 3 I=1,22
    3 F(I)=0.
      IND=0.
    4 DO 5 I=1,22
    5 F(I)=F(I)+S(I)
      SCOL=0.
      DO 6 I=3,22
    6 SCOL=SCOL+S(I)
      IF(SCOL.EQ.S(1))GO TO 8
      IND=1
    8 SEMB=0.
      NT=NT+1
      DO 9 I=3,9
    9 SEMB=SEMB+S(I)
      IF(SEMB.EQ.S(1)-S(2)) GO TO 11
```

```
      IND=1
   11 READ(50,100,END=2000)IX,(S(I),I=1,22)
      IF(IX(1).NE.ID(1))GO TO 111
      IF(IX(2).EQ.ID(2))GO TO 4
  111 CONTINUE
      FEM=F(20)
      IF(FEM.NE.0.) GO TO 15
      IF(F(2)/F(1).LT..80) GO TO 15
      DO 14 I=1,22
   14 VIRG(I)=VIRG(I)+F(I)
      CNT1=CNT1+1.
      GO TO 17
   15 DO 16 I=1,22
   16 WENCH(I)=WENCH(I)+F(I)
      CNT2=CNT2+1.
   17 PRINT 200,ID,(F(I),I=1,22),NT
      IF(IND.EQ.0.) GO TO 19
      PRINT 300
   19 IF(IX(1)+IX(2).NE.0) GO TO 2
      DIV1=VIRG(1)
      DIV2=WENCH(1)
      IF(DIV1.EQ.0.) DIV1=1.
      IF(DIV2.EQ.0.) DIV2=1.
      DO 21 I=1,22
      S(I)=VIRG(I)/DIV1
   21 F(I)=WENCH(I)/DIV2
      PRINT 400,CNT1
      PRINT 999,(LIST(I),I=1,8)
      PRINT 500,(ILIST(I),VIRG(I),S(I),I=1,20)
      CALL CICONF(VIRG(2),VIRG(1),XL,XU)
      PRINT 5004,XL,XU
      PRINT 700,CNT2
      PRINT 999,(LIST(I),I=1,8)
      PRINT 500,(ILIST(I),WENCH(I),F(I),I=1,20)
      CALL CICONF(WENCH(2),WENCH(1),XL,XU)
      PRINT 5004,XL,XU
 5004 FORMAT('0','BINOMIAL CONF. LIMITS HATCH.'2F10.6)
      WRITE(10)CNT1,(VIRG(I),I=1,22)
      WRITE(11)CNT2,(WENCH(I),I=1,22),LIST
      GO TO 3000
 4000 END FILE 10
      END FILE 11
      REWIND 10
      REWIND 11
      DO 24 I=1,22
   24 VIRG(I)=0.
      CNT1=0.
   26 READ(10,END=5000) C,(S(I),I=1,22)
      DO 25 I=1,22
   25 VIRG(I)=VIRG(I)+S(I)
      CNT1=CNT1+C
      GO TO 26
 5000 DO 27 I=1,22
   27 S(I)=VIRG(I)/VIRG(1)
      PRINT 5001,CNT1
      PRINT 999,(LIST(I),I=1,8)
 5001 FORMAT('1',F5.0,' TOTAL UNMATED FEMALES')
      PRINT 500,(ILIST(I),VIRG(I),S(I),I=1,20)
      CALL CICONF(VIRG(2),VIRG(1),XL,XU)
      PRINT 5004,XL,XU
   28 READ(11,END=2000) CNT2,(WENCH(I),I=1,22),LIST
      IF(CNT2.EQ.0.) GO TO 28
```

```
      DC 29 I=1,22
   29 F(I)=WENCH(I)/WENCH(1)
      P=F(19)
      VU=S(19)
      FC=1.-P/VU
      CCN=1.-FC
      DC 22 I=2,22
   22 X(I)=(F(I)-S(I)*CCN)/FC
      DCM=1.-X(2)
      PRINT 800,CNT1,CNT2
      PRINT 999,(LIST(I),I=1,8)
      PRINT 1000,ICON,DOM
      PRINT 1000,(ILIST(I),X(I),I=2,20)
      PC=(WENCH(19)*VIRG(1))/(WENCH(1)*VIRG(19))*100.
      PRINT 5002,PC
 5002 FORMAT('0',' PER CENT HAPLOID EGGS   'F10.5)
      PX=(WENCH(19))/(WENCH(19)+WENCH(2C))*100.
      PRINT 5003,PX
 5003 FORMAT('0',  ' PER CENT MALES IN ADULTS',F10.5)
      A=INT((100.-PC)/100.*WENCH(1)+.5)
      B=INT(DOM*A+.5)
      CALL CICONF(B,A,XL,XU)
      PRINT 5005,XL,XU
 5005 FORMAT('0 CONFIDENCE LIMITS DOM. LETHALITY',2F10.6)
      B=INT(X(2)*A+.5)
      CALL CICONF(B,A,XL,XU)
      PRINT 5006,XL,XU
 5006 FORMAT('0 CONFIDENCE LIMITS DIPLOID HATCHABILITY',2F10.6)
      A=WENCH(1)
      B=INT(A*PC/100.+.5)
      CALL CICONF(B,A,XL,XU)
      PRINT 5007,XL,XU
 5007 FORMAT('0 CONFIDENCE LIMITS HAPLOID EGGS='2F10.5)
      A=WENCH(19)+WENCH(20)
      B=WENCH(19)
      CALL CICONF(B,A,XL,XU)
      PRINT 5008,XL,XU
 5008 FORMAT('0 CONFIDENCE LIMITS MALES IN ADULTS'2F10.5)
C*****CONFIDENCE LIMITS ON HAPLOIC EGGS,DOMINANT LETHALITY,AND DIPLOID****
C*****HATCHABILITY ASSUME VIABILITY ESTIMATE OF MALES IS CERY GOOD     ****
C*****AND SAMPLE SIZES LARGE                                            ****
      GC TO 28
 2)00 CALL EXIT
      STOP
      END
```

```
      SUBROUTINE CICONF(A,B,XL,XU)
      IF(B.GT.300) GO TO 1
      CALL BICONF(A,B,XL,XU)
      RETURN
    1 P=A/B
      IF(P.LT..10) GO TO 2
      IF(P.GT..90) GO TO 22
      XL=1.96*SQRT(P*(1.-P)/B)
      XU=P+XL
      XL=P-XL
      RETURN
    2 CALL POIS (A,P,XL,XU)
      RETURN
   22 C=B-A
      X=C/B
      CALL POIS (C,X,XX,XZ)
      XL=1.-XZ
      XU=1.-XX
      RETURN
      END
```

```
      SUBROUTINE BICONF(TN,TM,P1,P2)
C*****COMPUTES BINOMIAL CONFIDENCE LIMITS  XN=OBSERVED NUMBER OUT OF TM
C*****  P1=LOWER LIMIT, P2= UPPER LIMIT  95 PER CENT
      DATA E/.0001/
      IF(TM.EQ.0.) GO TO 430
      Q=TM+1.
      P1=TN/TM
      P5=P1
      IF(P1.LT.1.) GO TO 50
      P1=.99
   50 IF(TN.EQ.0.) GO TO 260
      P3=0.
      CT=1.
   90 X=TM*ALOG(1.-P1)
      Z=ALOG(P1)-ALOG(1.-P1)
      S=EXP(X)
      Y=1.
  110 IF(Y.GE.TN)    GO TO 170
      X=  X+Z+ALOG(Q-Y)-ALOG(Y)
      S=S+EXP(X)
      Y=Y+1.
      GO TO 110
  170 IF(ABS(S-.975).LT.E) GO TO 260
      IF(CT.GT.20.) GO TO 260
      IF(S-.975.LT.0.) GO TO 240
      P3=P1
      P1=(P3+P5)/2.
      CT=CT+1.
      GO TO 90
  240 P5=P1
      P1=(P3+P5)/2.
      CT=CT+1.
      GO TO 90
  260 P2=TN/TM
      P5=P2
      IF(P2.GT.0.) GO TO 280
      P2=.01
  280 IF(TN.EQ.TM) GO TO 440
      P3=1.
      CT=1.
  290 X=TM*ALOG(P2)
      S=EXP(X)
      Z=ALOG(1.-P2)-ALOG(P2)
      Y=1.
  310 IF(Y.GE.TM-TN) GO TO 365
      X=  X+Z+ALOG(Q-Y)-ALOG(Y)
      S=S+EXP(X)
      Y=Y+1.
      GO TO 310
  365 IF(ABS(S-.975).LT.E) GO TO 440
      IF(CT.GT.20.) GO TO 440
      IF(S-.975.GT.0.) GO TO 420
      P5=P2
      P2=(P5+P3)/2.
      CT=CT+1.
      GO TO 290
  420 P3=P2
      P2=(P5+P3)/2.
      CT=CT+1.
      GO TO 290
  430 P1=0.
      P2=0.
  440 RETURN
      END
```

```
      SUBROUTINE POIS(XX,FR,XL,XU)
      DIMENSION A(200),B(100),A1(200),B1(100)
      EQUIVALENCE (A(101),B(1)),
     *            (A1(101),B1(1))
      DATA A/ 00000, 0.051, 0.355, 0.818, 1.366, 1.970, 2.613, 3.285,
     *        3.285, 4.460, 5.323, 5.323, 6.686, 6.686, 8.102, 8.102,
     *        9.598, 9.598,11.177,11.177,12.817,12.817,13.765,14.921,
     *       14.921,16.768,16.770,17.630,19.050,19.050,20.330,22.360,
     *       21.360,22.940,23.760,23.760,25.400,26.310,26.310,27.730,
     *       28.970,28.970,30.020,31.670,31.670,32.280,34.050,34.660,
     *       34.660,36.030,37.670,37.670,38.160,39.760,40.940,40.940,
     *       41.750,43.450,44.260,44.260,45.280,47.020,47.690,47.690,
     *       48.740,50.420,51.290,51.290,52.150,53.720,54.990,54.990,
     *       55.510,56.990,58.720,58.720,58.840,60.240,61.900,62.810,
     *       62.810,63.490,64.950,66.760,66.760,66.760,68.100,69.620,
     *       71.090,71.090,71.280,72.660,74.220,75.490,75.490,75.780,
     *       77.160,78.730,79.980,79.980/
      DATA B/ 80.25, 81.61, 83.14, 84.57, 84.57, 84.67, 86.01, 87.48,
     *        89.23, 89.23, 89.23, 90.37, 91.78, 93.48, 94.23, 94.23,
     *        94.70, 96.06, 97.54, 99.17, 99.17, 99.17,100.32,101.71,
     *       103.31,104.40,104.40,104.58,105.90,107.32,109.11,109.61,
     *       109.61,110.11,111.44,112.87,114.84,114.84,114.84,115.60,
     *       116.93,118.35,120.36,120.36,120.36,121.06,122.37,123.77,
     *       125.46,126.26,126.26,126.48,127.78,129.14,130.68,132.03,
     *       132.03,132.03,133.14,134.48,135.92,137.79,137.79,137.79,
     *       138.49,139.79,141.16,142.70,144.01,144.01,144.01,145.08,
     *       146.39,147.80,149.53,150.19,150.19,150.36,151.63,152.96,
     *       154.39,156.32,156.32,156.32,156.87,158.15,159.48,160.92,
     *       162.79,162.79,162.79,163.35,164.63,165.96,167.39,169.33,
     *       169.33,169.33,169.80,171.07/
      DATA A1/ 3.285, 5.323, 6.686, 8.102, 9.598,11.177,12.817,13.765,
     *        14.921,16.768,17.633,19.050,20.335,21.364,22.945,23.762,
     *        25.400,26.306,27.735,28.966,30.017,31.675,32.277,34.048,
     *        34.665,36.030,37.670,38.160,39.760,40.940,41.750,43.450,
     *        44.260,45.280,47.020,47.690,48.740,50.420,51.290,52.150,
     *        53.720,54.990,55.510,56.990,58.720,58.840,60.240,61.900,
     *        62.810,63.490,64.950,66.760,66.760,68.100,69.620,71.090,
     *        71.280,72.660,74.220,75.490,75.780,77.160,78.730,79.980,
     *        80.250,81.610,83.140,84.570,84.670,86.010,87.480,89.230,
     *        89.230,90.370,91.780,93.480,94.230,94.700,96.060,97.540,
     *        99.170,99.170,100.32,101.71,103.31,104.40,104.58,105.90,
     *        107.32,109.11,109.61,110.11,111.44,112.87,114.84,114.84,
     *        115.60,116.93,118.35,120.36/
      DATA B1/ 120.36,121.06,122.37,123.77,125.46,126.26,126.48,127.78,
     *         129.14,130.68,132.03,132.03,133.14,134.48,135.92,137.79,
     *         137.79,138.49,139.79,141.16,142.70,144.01,144.01,145.08,
     *         146.39,147.80,149.53,150.19,150.36,151.63,152.96,154.39,
     *         156.32,156.32,156.87,158.15,159.48,160.92,162.79,162.79,
     *         163.35,164.63,165.96,167.39,169.33,169.33,169.80,171.07,
     *         172.38,173.79,175.48,176.23,176.23,177.48,178.77,180.14,
     *         181.67,183.05,183.05,183.86,185.13,186.46,187.89,189.83,
     *         189.83,190.21,191.46,192.76,194.11,195.63,197.09,197.09,
     *         197.78,199.04,200.35,201.73,203.35,204.36,204.36,205.31,
     *         206.58,207.90,209.30,211.03,211.69,211.69,212.82,214.09,
     *         215.40,216.81,218.56,219.16,219.16,220.29,221.56,222.86,
     *         224.26,225.90,226.81,226.81/
      DEN=XX/FR
      NUM=XX+1.
      IF(NUM.GT.200) GO TO 1
      XL=A(NUM)/DEN
      XU=A1(NUM)/DEN
      GO TO 2
    1 XL=FR-1.96*SQRT(XX)/DEN
      XU=FR+1.96*SQRT(XX)/DEN
    2 RETURN
      END
```

V. DOMINANT LETHALITY IN HABROBRACON SPERM IN THE BIOSATELLITE II EXPERIMENT

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The *Habrobracon juglandis* males that were carried in Biosatellite II were *lemon* mutants with sex allele composition of x^e and x^f. They were mated to Raleigh wild-type females (sex allele composition x^k/x^l) immediately after they were received from disassembly crews at Hickam Field. Males from the ground-based control setup at Cape Kennedy were mated at the same time.

The males were left together with the females during transport to Oak Ridge. Here they were separated and the cycles of egg laying initiated according to the procedured defined in the Standing Instructions (1967).

Results

The summarized egg-laying record from each female is presented in the print-out (pp. 26-85), along with the hatchability, adult survival, and the time of death for each offspring that died. A key to the symbols in the print-out is provided in Table 2.

The data are pooled for the animals coming from the upper left and lower right modules at each nominal exposure position. The data may still be separated by inspection of the print-out, since no more than 20 males were carried in each module. Numbering of the mated females began in units of 24. Thus the males in the upper left module (UL), as seen from the radiation source at the nominal exposure position of 4000 R, were given numbers 1-20. The males in the lower right module (LR) were numbered 25-42. The next group began at 49, etc.

Table 2. Explanation of symbols for data print-out

Category	Example	Explanation
DATE	11 SEP 67	
EXPERIMENT	BIOS B FLT	Spacecraft (or ground control)
EXPOSURE	4000	Nominal exposure position
FEMALE NOS	001 042	Numerical ordering of all females
SEX	M	Male (or female)
STOCKS TREATED	LE	Lemon mutant
MATED TO	R	Raleigh wild type
B		Brood number from which female was taken
F		Female
E		Number of eggs laid
H		Number of eggs hatched
1, 2, 3A, 3B, 4A, 4B, 5		Embryonic stage of death*
N, E, M, L, SL		Larval stage of death*
P, E, M, L		Pupal stage of death*
T		Number of transfers
UNMATED FEMALES		Number of females producing no female offspring
MATED FEMALES		Number of females producing female offspring
IN P		Inner compartment of packages; irradiated prior to launch
OUT		Outer and middle compartments of packages
PRETEST		Habrobracon tested at the time the animals were irradiated prior to being placed on spacecraft or in ground-based control setup

*See von Borstel, R. C., and R. H. Smith, 1967, Mutations in Habrobracon, ORNL-TM-1732, Quarterly Progress Report to NASA covering the period July 1 - September 30, 1966, pp. 1-8, for a complete description of the stages of death.

The data for hatchability and adult survival of unfertilized eggs were pooled from the females, at all positions in the satellite, that failed to mate. From these data and the data for mated females, the frequencies of fertilized eggs and their death, at every stage of development, were determined (pp. 86-99).

Conclusion

Comparison of hatchabilities, adult survival, and their confidence limits show that when dominant lethality in sperm is the criterion, no significant difference exists between males that had been in the spacecraft and males that had been in the ground-based control setup.

The true exposures that were received by the Habrobracon are not the same as the nominal exposures (see von Borstel, Smith, Grosch, Whiting, et al., 1968, for some of the reasons). Nevertheless, this conclusion can be reached because the relative exposures received by the Habrobracon in the spacecraft and ground-based control setup, though not identical, were similar.

Literature Cited

Standing Instructions and Flight-Time Instructions for the Habrobracon (P-1079) Experiment in the Three-Day Biosatellite, ORNL-TM-1957, Quarterly Progress Report to NASA covering the period October 1 - December 31, 1966, pp. 29-247.

DATE	EXPERIMENT	EXPOSURE
11 SEP67	BIOS B FLT	4000

FEMALE NOS	SEX
001 042	M

STOCKS TREATED	MATED TO
LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
7	1	90.	65.	23.	0.0	0.0	0.0	1.	0.0	1.	1.	1.	0.0	0.0	1.	1.	1.	1.	0.0	37.	22.	0.0	0.0	8
8	2	80.	79.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	1.	0.0	2.	3.	70.	0.0	0.0	0.0	7
8	3	67.	35.	28.	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	15.	18.	0.0	0.0	7
8	4	66.	38.	23.	0.0	0.0	0.0	1.	2.	2.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	20.	14.	0.0	0.0	8
8	5	63.	61.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	4.	0.0	0.0	0.0	0.0	1.	0.0	0.0	56.	0.0	0.0	0.0	7
8	7	72.	43.	25.	0.0	3.	1.	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	24.	15.	0.0	0.0	8
7	8	70.	49.	20.	0.0	0.0	1.	0.0	0.0	0.0	2.	1.	0.0	0.0	2.	0.0	5.	0.0	0.0	20.	19.	0.0	0.0	8
8	9	46.	29.	8.	0.0	3.	1.	1.	3.	1.	0.0	3.	0.0	0.0	1.	0.0	3.	0.0	0.0	10.	12.	0.0	0.0	7
8	10	57.	55.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	1.	0.0	1.	1.	0.0	50.	0.0	0.0	0.0	7
8	11	64.	41.	21.	0.0	1.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	3.	1.	3.	0.0	1.	12.	20.	0.0	0.0	8
31	12	85.	83.	2.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	4.	3.	0.0	74.	0.0	0.0	0.0	7
28	13	96.	68.	26.	0.0	0.0	1.	0.0	1.	0.0	1.	0.0	0.0	0.0	1.	0.0	3.	1.	1.	36.	25.	0.0	0.0	8
45	15	74.	72.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	2.	59.	9.	0.0	0.0	8
45	16	45.	41.	1.	0.0	2.	1.	0.0	0.0	0.0	1.	0.0	2.	0.0	4.	1.	0.0	0.0	1.	32.	0.0	0.0	0.0	7

14	17	57.	38.	15.	0.0	2.	1.	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.	15.	0.0	0.0	7
14	18	57.	39.	15.	0.0	0.0	0.0	1.	0.0	2.	2.	2.	0.0	2.	0.0	0.0	0.0	0.0	2.	13.	18.	0.0	0.0	7
14	19	83.	79.	0.0	0.0	2.	0.0	0.0	0.0	2.	2.	2.	2.	2.	1.	3.	0.0	2.	0.0	65.	0.0	0.0	0.0	6
207	20	55.	24.	24.	0.0	4.	2.	0.0	1.	0.0	1.	3.	1.	0.0	1.	0.0	0.0	0.0	0.0	9.	9.	0.0	0.0	7
8	25	81.	45.	34.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	22.	21.	0.0	0.0	8
8	26	64.	59.	0.0	0.0	3.	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	1.	1.	55.	0.0	0.0	0.0	7
8	27	101.	64.	37.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	1.	0.0	1.	35.	25.	0.0	0.0	8
8	28	82.	79.	0.0	0.0	2.	0.0	0.0	1.	0.0	1.	1.	0.0	0.0	1.	1.	1.	0.0	0.0	74.	0.0	0.0	0.0	8
8	29	68.	67.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	63.	0.0	0.0	0.0	7
31	30	57.	34.	21.	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	1.	0.0	1.	15.	15.	0.0	0.0	8
31	31	94.	67.	25.	0.0	0.0	0.0	0.0	1.	1.	1.	3.	0.0	0.0	3.	1.	0.0	0.0	2.	31.	26.	0.0	0.0	8
31	32	68.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	3.	0.0	10.	5.	4.	0.0	1.	41.	0.0	0.0	0.0	8
31	33	75.	74.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	7.	4.	1.	3.	0.0	58.	0.0	0.0	0.0	9
207	34	65.	32.	31.	0.0	0.0	1.	0.0	1.	0.0	0.0	6.	0.0	0.0	0.0	1.	0.0	0.0	0.0	15.	10.	0.0	0.0	8
207	35	70.	40.	27.	0.0	2.	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	6.	1.	1.	2.	0.0	14.	15.	0.0	0.0	8
207	36	61.	40.	21.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	2.	0.0	1.	0.0	16.	17.	0.0	0.0	8
207	37	93.	63.	27.	0.0	1.	0.0	0.0	2.	0.0	1.	2.	1.	0.0	0.0	0.0	0.0	1.	0.0	39.	19.	0.0	0.0	8
203	38	82.	53.	27.	0.0	0.0	0.0	0.0	1.	1.	0.0	1.	0.0	1.	2.	0.0	3.	1.	1.	26.	18.	0.0	0.0	8
40	39	64.	43.	18.	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	1.	2.	23.	15.	0.0	0.0	7
40	40	61.	38.	22.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	1.	18.	16.	0.0	0.0	7
40	41	8.	5.	0.0	0.0	2.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	0.0	3
40	42	85.	63.	20.	0.0	2.	0.0	0.0	0.0	0.0	2.	6.	0.0	0.0	1.	1.	2.	3.	0.0	30.	18.	0.0	0.0	8

UNMATED FEMALES 11.

11 SEP67 BIOS B FLT 4000

E	770.	1.000000
H	745.	0.967532
1	5.	0.006494
2	0.0	0.0
3A	12.	0.015584
3B	3.	0.003896
4A	1.	0.001299
4B	1.	0.001299
5	3.	0.003896
N	5.	0.006494
E	18.	0.023377
M	9.	0.011688
L	3.	0.003896
SL	24.	0.031169
P	16.	0.020779
E	13.	0.016883
M	12.	0.015584
L	7.	0.009091
	638.	0.828571
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.953208 0.978223

MATED FEMALES 25.

11 SEP67 B10S B FLT 4000

E	1736.	1.000000
H	1128.	0.649770
1	538.	0.309908
2	0.0	0.0
3A	25.	0.014401
3B	8.	0.004608
4A	6.	0.003456
4B	19.	0.010945
5	12.	0.006912
N	20.	0.011521
E	34.	0.019585
M	5.	0.002880
L	4.	0.002304
SL	27.	0.015553
P	9.	0.005184
E	25.	0.014401
M	14.	0.008065
L	15.	0.008641
	564.	0.324885
	411.	0.236751

BINOMIAL CONF. LIMITS HATCH. 0.627329 0.672210

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B FLT	2000

FEMALE NOS	SEX
049 092	M

STOCKS TREATED	MATED TO
LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
37	49	48.	41.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	1.	3.	3.	0.0	7.	23.	0.0	0.0	6
37	50	46.	35.	10.	0.0	0.0	0.0	0.0	1.	0.0	1.	2.	0.0	2.	6.	2.	1.	3.	0.0	6.	12.	0.0	0.0	6
37	51	47.	37.	8.	0.0	1.	0.0	0.0	1.	0.0	1.	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	14.	19.	0.0	0.0	6
37	52	60.	55.	0.0	0.0	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	53.	0.0	0.0	0.0	6
37	53	4.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	3.	0.0	0.0	0.0	1
37	54	54.	52.	1.	0.0	1.	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	6.	3.	1.	0.0	40.	0.0	0.0	0.0	6
13	55	52.	36.	16.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	18.	16.	0.0	0.0	6
13	56	56.	43.	13.	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.	21.	0.0	0.0	6
13	57	40.	35.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.	21.	0.0	0.0	6
13	58	39.	29.	9.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	12.	16.	0.0	0.0	6
13	60	41.	35.	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	20.	12.	0.0	0.0	5
13	61	52.	35.	16.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	1.	3.	0.0	0.0	9.	20.	0.0	0.0	6
13	62	28.	18.	10.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.	12.	0.0	0.0	5
13	63	51.	49.	0.0	0.0	0.0	0.0	0.0	2.	0.0	2.	1.	2.	0.0	0.0	2.	0.0	0.0	1.	41.	0.0	0.0	0.0	6
13	64	53.	42.	9.	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	1.	6.	2.	6.	0.0	14.	11.	0.0	0.0	6

40	65	52.	41.	10.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	1.	15.	22.	0.0	0.0	5
40	66	13.	6.	6.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	5.	0.0	0.0	4
40	67	60.	46.	13.	0.0	1.	0.0	0.0	0.0	0.0	1.	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	21.	21.	0.0	0.0	6
40	68	24.	19.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	12.	0.0	0.0	4
208	74	39.	38.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	5.	0.0	1.	3.	1.	3.	0.0	0.0	25.	0.0	0.0	0.0	5
208	75	24.	24.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	23.	0.0	0.0	0.0	4
208	76	55.	48.	5.	0.0	0.0	0.0	1.	1.	0.0	0.0	4.	0.0	1.	0.0	1.	0.0	0.0	2.	9.	31.	0.0	0.0	5
208	77	56.	44.	11.	0.0	0.0	0.0	0.0	0.0	1.	0.0	4.	2.	0.0	1.	0.0	0.0	0.0	0.0	15.	22.	0.0	0.0	6
208	78	55.	47.	7.	0.0	0.0	1.	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	4.	0.0	0.0	0.0	12.	27.	0.0	0.0	6
13	79	39.	27.	11.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	2.	0.0	9.	14.	0.0	0.0	5
9	80	59.	45.	10.	0.0	1.	0.0	0.0	1.	2.	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	18.	23.	0.0	0.0	6
9	81	72.	57.	14.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	1.	0.0	0.0	1.	31.	21.	0.0	0.0	6
9	82	66.	51.	14.	0.0	0.0	0.0	0.0	1.	0.0	1.	5.	0.0	0.0	1.	0.0	0.0	0.0	0.0	16.	28.	0.0	0.0	6
40	83	53.	43.	10.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	1.	0.0	2.	0.0	0.0	1.	20.	16.	0.0	0.0	6
40	84	55.	43.	12.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	2.	1.	0.0	0.0	18.	18.	0.0	0.0	6
202	85	42.	35.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	4.	3.	0.0	1.	1.	9.	16.	0.0	0.0	6
202	86	55.	45.	8.	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	2.	0.0	1.	1.	0.0	1.	2.	15.	23.	0.0	0.0	6
202	87	48.	37.	8.	0.0	1.	0.0	0.0	2.	0.0	1.	1.	0.0	0.0	4.	3.	0.0	3.	0.0	7.	18.	0.0	0.0	6
202	88	32.	24.	8.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	2.	0.0	0.0	2.	7.	11.	0.0	0.0	6
202	89	49.	42.	5.	0.0	0.0	0.0	0.0	1.	1.	0.0	5.	0.0	0.0	1.	1.	1.	1.	0.0	16.	17.	0.0	0.0	5
202	90	47.	35.	11.	0.0	0.0	0.0	0.0	1.	0.0	3.	1.	1.	2.	0.0	2.	0.0	0.0	0.0	14.	12.	0.0	0.0	6
202	91	42.	37.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	1.	1.	0.0	0.0	0.0	20.	11.	0.0	0.0	4
202	92	60.	37.	19.	0.0	1.	0.0	0.0	1.	2.	4.	6.	0.0	0.0	0.0	1.	0.0	0.0	0.0	7.	19.	0.0	0.0	6

UNMATED FEMALES 6.

11 SEP 67 B10S B FLT 2000

E	232.	1.000000
H	222.	0.956897
1	1.	0.004310
2	0.0	0.0
3A	7.	0.030172
3B	0.0	0.0
4A	0.0	0.0
4B	2.	0.008621
5	0.0	0.0
N	4.	0.017241
E	6.	0.025862
M	2.	0.008621
L	1.	0.004310
SL	3.	0.012931
P	10.	0.043103
E	7.	0.030172
M	2.	0.008621
L	2.	0.008621
	185.	0.797414
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.928692 0.979142

MATED FEMALES 32.

11 SEP67	B10S B FLT		2000
E	1536.	1.000000	
H	1195.	0.777995	
1	308.	0.200521	
2	0.0	0.0	
3A	7.	0.004557	
3B	1.	0.000651	
4A	1.	0.000651	
4B	16.	0.010417	
5	8.	0.005208	
N	14.	0.009115	
E	64.	0.041667	
M	12.	0.007812	
L	9.	0.005859	
SL	20.	0.013021	
P	39.	0.025391	
E	12.	0.007812	
M	21.	0.013672	
L	11.	0.007161	
	423.	0.275391	
	570.	0.371094	

BINOMIAL CONF. LIMITS HATCH. 0.757211 0.798779

DATE	EXPERIMENT	EXPOSURE
11 SEP67	BIOS B FLT	1000

FEMALE NOS	SEX
097 140	M

STOCKS TREATED	MATED TO
LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
209	97	61.	54.	6.	0.0	0.0	0.0	1.	0.0	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	24.	26.	0.0	0.0	6
209	98	42.	34.	8.	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	0.0	0.0	0.0	3.	1.	0.0	1.	7.	18.	0.0	0.0	6
209	99	55.	51.	2.	0.0	2.	0.0	0.0	0.0	0.0	2.	4.	4.	0.0	0.0	1.	0.0	0.0	0.0	39.	1.	0.0	0.0	6
209	100	52.	45.	5.	0.0	0.0	2.	0.0	0.0	0.0	1.	5.	0.0	0.0	0.0	0.0	0.0	0.0	1.	11.	27.	0.0	0.0	6
209	102	65.	55.	9.	1.	0.0	0.0	0.0	0.0	0.0	2.	6.	1.	0.0	0.0	1.	0.0	0.0	0.0	13.	32.	0.0	0.0	6
209	103	54.	42.	8.	0.0	2.	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	0.0	1.	1.	0.0	0.0	15.	24.	0.0	0.0	6
206	104	36.	32.	3.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	10.	19.	0.0	0.0	4
206	105	67.	61.	5.	0.0	0.0	0.0	0.0	1.	0.0	3.	5.	2.	0.0	0.0	1.	0.0	0.0	2.	18.	30.	0.0	0.0	6
43	106	16.	15.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	1.	0.0	0.0	2.	10.	0.0	0.0	2
202	107	48.	44.	2.	0.0	0.0	0.0	1.	1.	0.0	9.	4.	1.	0.0	0.0	0.0	0.0	0.0	0.0	8.	22.	0.0	0.0	5
202	108	41.	36.	4.	0.0	1.	0.0	0.0	0.0	0.0	2.	1.	2.	0.0	0.0	0.0	0.0	0.0	1.	8.	22.	0.0	0.0	6
202	109	48.	46.	1.	0.0	0.0	0.0	0.0	0.0	1.	1.	1.	0.0	1.	5.	2.	2.	5.	5.	7.	17.	0.0	0.0	6
202	110	29.	25.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	10.	12.	0.0	0.0	4
38	111	5.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	2
38	112	63.	59.	3.	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	2.	4.	1.	2.	1.	12.	35.	0.0	0.0	6

201	113	66.	61.	5.	0.0	0.0	0.0	0.0	0.0	0.0	5.	3.	1.	0.0	2.	1.	0.0	1.	0.0	20.	28.	0.0	0.0	6
201	114	33.	32.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	3.	0.0	1.	0.0	0.0	0.0	0.0	0.0	27.	0.0	0.0	0.0	4
201	115	44.	40.	3.	0.0	1.	0.0	0.0	0.0	0.0	0.0	11.	0.0	0.0	5.	2.	0.0	1.	1.	3.	17.	0.0	0.0	6
43	121	53.	51.	2.	0.0	0.0	0.0	0.0	0.0	0.0	2.	3.	0.0	0.0	0.0	2.	2.	1.	1.	11.	29.	0.0	0.0	6
43	122	64.	56.	5.	0.0	1.	0.0	0.0	2.	0.0	0.0	3.	6.	2.	3.	2.	0.0	1.	0.0	17.	22.	0.0	0.0	5
43	123	43.	39.	4.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	2.	1.	2.	0.0	17.	15.	0.0	0.0	6
44	124	54.	47.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.	27.	0.0	0.0	6
44	125	66.	56.	9.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	2.	0.0	1.	0.0	1.	0.0	0.0	21.	29.	0.0	0.0	6
44	126	76.	73.	0.0	0.0	3.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	2.	0.0	1.	68.	0.0	0.0	0.0	6
45	127	58.	45.	12.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	13.	30.	0.0	0.0	6
45	129	52.	45.	6.	0.0	0.0	0.0	0.0	1.	0.0	0.0	3.	1.	0.0	0.0	0.0	1.	0.0	0.0	13.	27.	0.0	0.0	6
45	130	67.	60.	5.	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	3.	0.0	0.0	3.	1.	1.	0.0	16.	34.	0.0	0.0	6
201	132	35.	35.	2.	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	7.	0.0	1.	0.0	13.	13.	0.0	0.0	6
201	133	42.	40.	1.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	3.	4.	6.	0.0	0.0	3.	21.	0.0	0.0	6
200	134	55.	48.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	1.	0.0	9.	35.	0.0	0.0	6
200	135	53.	44.	9.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	1.	1.	2.	0.0	13.	25.	0.0	0.0	6
200	136	47.	45.	2.	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	0.0	5.	1.	1.	1.	8.	25.	0.0	0.0	6
200	137	46.	42.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	2.	1.	16.	20.	0.0	0.0	5
200	138	57.	54.	2.	0.0	1.	0.0	0.0	0.0	0.0	1.	2.	1.	0.0	0.0	3.	0.0	1.	1.	13.	32.	0.0	0.0	6
200	139	52.	44.	4.	0.0	2.	0.0	0.0	2.	0.0	1.	1.	1.	0.0	0.0	1.	0.0	0.0	2.	11.	27.	0.0	0.0	6
200	140	56.	45.	10.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	1.	0.0	12.	30.	0.0	0.0	6

UNMATED FEMALES 3.

11 SEP67 B10S B FLT 1000

E	114.	1.000000
H	110.	0.964912
1	0.0	0.0
2	0.0	0.0
3A	4.	0.035088
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	2.	0.017544
E	6.	0.052632
M	0.0	0.0
L	1.	0.008772
SL	0.0	0.0
P	1.	0.008772
E	2.	0.017544
M	0.0	0.0
L	1.	0.008772
	97.	0.850877
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.914086 0.990354

MATED FEMALES 33.

11 SEP67	BIOS B FLT		1000
E	1691.	1.000000	
H	1496.	0.884684	
1	160.	0.094619	
2	1.	0.000591	
3A	15.	0.008870	
3B	2.	0.001183	
4A	3.	0.001774	
4B	13.	0.007688	
5	1.	0.000591	
N	38.	0.022472	
F	69.	0.040804	
M	30.	0.017741	
L	6.	0.003548	
SL	21.	0.012419	
P	54.	0.031934	
E	21.	0.012419	
M	24.	0.014193	
L	20.	0.011827	
	432.	0.255470	
	781.	0.461857	
BINOMIAL CONF. LIMITS HATCH.		0.869460	0.899907

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B FLT	0500

FEMALE NOS	SEX
145 187	M

STOCKS TREATED	MATED TO
LF	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
3	145	37.	33.	3.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	3.	2.	1.	3.	0.0	2.	1.	5.	14.	0.0	0.0	6
3	146	40.	38.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	2.	0.0	0.0	0.0	10.	23.	0.0	0.0	6
3	147	62.	58.	3.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	5.	1.	3.	2.	18.	27.	0.0	0.0	6
3	148	44.	43.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	3.	1.	2.	6.	5.	2.	3.	0.0	19.	0.0	0.0	0.0	6
3	149	63.	55.	6.	0.0	0.0	0.0	0.0	2.	0.0	0.0	2.	1.	0.0	3.	5.	0.0	4.	1.	12.	27.	0.0	0.0	6
3	150	53.	48.	3.	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	46.	0.0	0.0	0.0	6
3	151	82.	82.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	1.	1.	4.	11.	0.0	9.	1.	41.	10.	0.0	0.0	7
3	152	59.	53.	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	1.	2.	1.	2.	13.	32.	0.0	0.0	6
3	153	53.	47.	6.	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	10.	32.	0.0	0.0	6
3	154	57.	53.	2.	0.0	0.0	0.0	1.	1.	0.0	1.	3.	2.	1.	1.	5.	1.	1.	0.0	5.	33.	0.0	0.0	6
200	155	63.	56.	5.	0.0	1.	0.0	0.0	1.	0.0	0.0	5.	0.0	0.0	1.	0.0	3.	0.0	0.0	17.	30.	0.0	0.0	6
198	156	57.	54.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	1.	0.0	0.0	0.0	1.	0.0	0.0	30.	17.	0.0	0.0	6
198	157	54.	50.	3.	0.0	0.0	0.0	1.	0.0	0.0	0.0	3.	1.	0.0	0.0	3.	2.	0.0	0.0	12.	29.	0.0	0.0	6
198	158	48.	43.	0.0	0.0	4.	0.0	1.	0.0	0.0	2.	2.	1.	1.	4.	2.	0.0	0.0	0.0	17.	14.	0.0	0.0	6
194	160	58.	53.	2.	0.0	1.	0.0	1.	1.	0.0	1.	8.	0.0	0.0	0.0	2.	0.0	0.0	0.0	13.	29.	0.0	0.0	6

34	161	57.	51.	4.	0.0	2.	0.0	0.0	0.0	0.0	1.	3.	1.	0.0	0.0	1.	4.	0.0	1.	11.	29.	0.0	0.0	6
35	162	66.	58.	7.	0.0	1.	0.0	0.0	0.0	0.0	1.	8.	1.	0.0	2.	2.	1.	0.0	0.0	16.	27.	0.0	0.0	6
35	163	49.	47.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	1.	0.0	2.	2.	1.	2.	1.	15.	21.	0.0	0.0	5
1	169	66.	59.	5.	0.0	1.	0.0	0.0	1.	0.0	0.0	3.	0.0	0.0	0.0	1.	0.0	0.0	1.	25.	29.	0.0	0.0	7
46	170	88.	83.	3.	0.0	0.0	0.0	1.	1.	0.0	3.	13.	1.	9.	5.	2.	3.	0.0	3.	21.	23.	0.0	0.0	8
46	171	4.	3.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	3
46	172	73.	70.	2.	0.0	0.0	0.0	0.0	1.	0.0	2.	6.	1.	0.0	6.	5.	3.	0.0	1.	14.	32.	0.0	0.0	6
46	173	62.	57.	2.	0.0	1.	1.	0.0	0.0	1.	1.	1.	1.	1.	0.0	1.	0.0	3.	1.	11.	37.	0.0	0.0	7
45	174	77.	73.	3.	0.0	0.0	0.0	0.0	1.	0.0	1.	6.	1.	0.0	0.0	1.	3.	0.0	0.0	23.	38.	0.0	0.0	8
45	175	62.	61.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	2.	2.	0.0	54.	0.0	0.0	0.0	7
45	176	73.	68.	4.	0.0	0.0	1.	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	2.	0.0	8.	0.0	28.	27.	0.0	0.0	8
45	177	66.	63.	2.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	1.	0.0	1.	58.	0.0	0.0	0.0	7
45	178	72.	68.	4.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	27.	38.	0.0	0.0	7
35	179	84.	84.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	6.	0.0	0.0	4.	2.	0.0	0.0	0.0	28.	42.	0.0	0.0	8
35	180	82.	77.	4.	0.0	0.0	0.0	0.0	1.	0.0	5.	3.	1.	0.0	6.	1.	3.	0.0	0.0	25.	33.	0.0	0.0	8
35	181	71.	67.	3.	0.0	0.0	0.0	0.0	1.	0.0	1.	3.	3.	2.	12.	10.	1.	0.0	1.	10.	24.	0.0	0.0	8
35	182	78.	68.	7.	0.0	1.	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	4.	4.	5.	2.	0.0	16.	36.	0.0	0.0	7
33	183	65.	60.	4.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	2.	2.	1.	4.	0.0	0.0	23.	27.	0.0	0.0	8
33	184	71.	63.	6.	0.0	1.	0.0	1.	0.0	0.0	1.	2.	3.	0.0	3.	0.0	2.	0.0	0.0	27.	25.	0.0	0.0	8
33	186	78.	73.	3.	0.0	1.	0.0	0.0	1.	0.0	1.	2.	0.0	0.0	1.	4.	3.	2.	2.	30.	28.	0.0	0.0	8
33	187	61.	56.	4.	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.	34.	0.0	0.0	8

UNMATED FEMALES 4.

11 SEP67 B10S B FLT 0500

E	225.	1.000000
H	215.	0.955556
1	7.	0.031111
2	0.0	0.0
3A	3.	0.013333
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	2.	0.008889
E	8.	0.035556
M	1.	0.004444
L	2.	0.008889
SL	7.	0.031111
P	6.	0.026667
E	5.	0.022222
M	6.	0.026667
L	1.	0.004444
	177.	0.786667
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.926427 0.978472

MATED FEMALES 32.

11 SEP67 BIOS B FLT 0500

E	2010.	1.000000
H	1860.	0.925373
1	107.	0.053234
2	0.0	0.0
3A	16.	0.007960
3B	3.	0.001493
4A	6.	0.002985
4B	16.	0.007960
5	2.	0.000995
N	31.	0.015423
F	98.	0.048756
M	25.	0.012438
L	19.	0.009453
SL	65.	0.032338
P	79.	0.039303
E	44.	0.021891
M	38.	0.018905
L	18.	0.008955
	574.	0.285572
	869.	0.432338

BINOMIAL CONF. LIMITS HATCH. 0.912697 0.937184

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B FLT IN P	2000 UL

FEMALE NOS	SEX
193 216	M

STOCKS TREATED	MATED TO
LE	R

B F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
37 193	43.	26.	17.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	13.	11.	0.0	0.0	5
37 194	55.	36.	17.	0.0	0.0	0.0	0.0	1.	1.	4.	2.	0.0	0.0	1.	2.	1.	1.	1.	16.	8.	0.0	0.0	6
37 195	44.	27.	14.	0.0	1.	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	10.	15.	0.0	0.0	5
13 196	43.	27.	16.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	21.	0.0	0.0	6
13 197	21.	18.	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	2.	2.	4.	0.0	0.0	1.	3.	5.	0.0	0.0	4
13 198	62.	43.	17.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	23.	19.	0.0	0.0	6
13 199	60.	40.	19.	0.0	1.	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	1.	1.	21.	14.	0.0	0.0	6
13 201	30.	30.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	0.0	1.	0.0	1.	0.0	24.	0.0	0.0	0.0	4
208 202	58.	54.	1.	0.0	2.	1.	0.0	0.0	0.0	0.0	3.	0.0	0.0	2.	2.	0.0	0.0	2.	42.	3.	0.0	0.0	6
208 203	8.	7.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	5.	0.0	0.0	1
5 204	42.	30.	8.	0.0	1.	1.	0.0	1.	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	10.	19.	0.0	0.0	6
5 205	40.	24.	15.	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.	12.	0.0	0.0	6
5 206	49.	46.	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	2.	0.0	1.	0.0	2.	1.	2.	2.	31.	5.	0.0	0.0	5
17 207	55.	53.	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	50.	0.0	0.0	0.0	6
17 208	64.	59.	2.	0.0	2.	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	0.0	57.	0.0	0.0	0.0	6
17 210	61.	42.	16.	0.0	1.	1.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.	20.	0.0	0.0	6
17 211	56.	42.	14.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	2.	0.0	1.	0.0	0.0	1.	13.	21.	0.0	0.0	6
17 212	62.	42.	20.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	1.	1.	15.	22.	0.0	0.0	6

UNMATED FEMALES 3.

11 SEP67	B10S B FLT	IN P	2000 UL
E	149.	1.000000	
H	142.	0.953020	
1	2.	0.013423	
2	0.0	0.0	
3A	2.	0.013423	
3B	2.	0.013423	
4A	1.	0.006711	
4B	0.0	0.0	
5	0.0	0.0	
N	0.0	0.0	
E	5.	0.033557	
M	0.0	0.0	
L	0.0	0.0	
SL	0.0	0.0	
P	3.	0.020134	
E	0.0	0.0	
M	3.	0.020134	
L	0.0	0.0	
	131.	0.879195	
	0.0	0.0	

BINOMIAL CONF. LIMITS HATCH. 0.908630 0.980914

MATED FEMALES 15.

11 SEP67	B10S B FLT	IN P	2000 UL
E	704.	1.000000	
H	504.	0.715909	
1	177.	0.251420	
2	0.0	0.0	
3A	7.	0.009943	
3B	3.	0.004261	
4A	0.0	0.0	
4B	5.	0.007102	
5	8.	0.011364	
N	7.	0.009943	
E	15.	0.021307	
M	2.	0.002841	
L	5.	0.007102	
SL	6.	0.008523	
P	14.	0.019886	
E	3.	0.004261	
M	7.	0.009943	
L	9.	0.012784	
	236.	0.335227	
	200.	0.284091	

BINOMIAL CONF. LIMITS HATCH. 0.682595 0.749223

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B FLT	0000

FEMALE NOS	SEX
217 331	M

STOCKS	TREATED	MATED TO
	LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
37	217	44.	44.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	10.	1.	0.0	2.	0.0	0.0	1.	0.0	25.	0.0	0.0	0.0	5
37	218	9.	8.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	1.	0.0	3.	0.0	0.0	1
37	219	48.	47.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	6.	0.0	0.0	5.	2.	0.0	2.	2.	14.	15.	0.0	0.0	6
37	220	55.	54.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	5.	6.	3.	1.	4.	1.	2.	0.0	32.	0.0	0.0	0.0	6
13	221	54.	52.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	2.	1.	1.	0.0	0.0	0.0	0.0	3.	13.	32.	0.0	0.0	6
13	222	46.	46.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	14.	29.	0.0	0.0	6
208	223	54.	51.	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	5.	1.	1.	5.	9.	0.0	0.0	1.	6.	23.	0.0	0.0	6
208	224	41.	40.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	36.	0.0	0.0	0.0	5
208	226	44.	41.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	1.	0.0	2.	0.0	35.	0.0	0.0	0.0	6
1	227	54.	51.	2.	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	3.	0.0	0.0	2.	43.	0.0	0.0	0.0	6
1	228	45.	44.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	2.	1.	38.	0.0	0.0	0.0	5
33	229	48.	47.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	7.	1.	2.	0.0	4.	1.	3.	1.	7.	19.	0.0	0.0	5
33	230	58.	54.	0.0	0.0	4.	0.0	0.0	0.0	0.0	4.	2.	0.0	1.	5.	5.	0.0	5.	3.	29.	0.0	0.0	0.0	6
33	231	53.	52.	0.0	0.0	0.0	0.0	0.0	1.	0.0	5.	5.	0.0	1.	0.0	3.	3.	1.	0.0	28.	6.	0.0	0.0	6
33	232	59.	58.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	2.	18.	35.	0.0	0.0	6
33	233	44.	40.	1.	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	37.	0.0	0.0	0.0	6

17 234	43.	42.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	0.0	1.	2.	1.	0.0	0.0	19.	15.	0.0	0.0	6
17 235	43.	36.	7.	0.0	0.0	0.0	0.0	0.0	0.0	1.	4.	0.0	3.	1.	5.	0.0	1.	0.0	4.	17.	0.0	0.0	6
17 236	68.	67.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	2.	0.0	1.	3.	0.0	3.	3.	20.	31.	0.0	0.0	6
41 241	67.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	3.	0.0	1.	3.	1.	2.	4.	26.	22.	0.0	0.0	6
41 242	37.	34.	1.	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	2.	0.0	0.0	3.	7.	20.	0.0	0.0	5
41 243	7.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	4.	0.0	0.0	1
41 244	57.	56.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	0.0	1.	1.	0.0	0.0	51.	0.0	0.0	0.0	6
41 245	42.	40.	1.	0.0	1.	0.0	0.0	0.0	0.0	2.	3.	0.0	0.0	0.0	1.	0.0	2.	0.0	32.	0.0	0.0	0.0	6
31 246	48.	48.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.	0.0	0.0	1.	0.0	0.0	1.	2.	38.	0.0	0.0	0.0	6
41 247	58.	54.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	4.	3.	0.0	0.0	6.	39.	0.0	0.0	0.0	6
31 248	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	1.	0.0	5.	5.	1.	2.	1.	14.	19.	0.0	0.0	6
31 249	49.	47.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	1.	1.	0.0	0.0	1.	14.	28.	0.0	0.0	6
31 250	60.	60.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	1.	0.0	56.	0.0	0.0	0.0	6
31 251	35.	34.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	1.	2.	1.	1.	27.	0.0	0.0	0.0	4
31 252	47.	46.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	44.	0.0	0.0	0.0	6
31 253	56.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	1.	1.	0.0	2.	2.	47.	0.0	0.0	0.0	6
7 254	62.	56.	4.	0.0	2.	0.0	0.0	0.0	0.0	0.0	8.	0.0	0.0	0.0	1.	1.	0.0	0.0	15.	31.	0.0	0.0	6
7 255	48.	48.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	14.	30.	0.0	0.0	6
7 256	54.	53.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	0.0	1.	0.0	0.0	0.0	18.	30.	0.0	0.0	5
7 257	61.	60.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	1.	1.	0.0	0.0	0.0	1.	10.	44.	0.0	0.0	6
15 265	56.	53.	1.	0.0	0.0	0.0	1.	0.0	1.	0.0	1.	2.	0.0	0.0	4.	0.0	0.0	0.0	14.	32.	0.0	0.0	6
15 266	66.	64.	2.	0.0	0.0	0.0	0.0	0.0	0.0	1.	7.	2.	0.0	0.0	1.	0.0	0.0	1.	18.	34.	0.0	0.0	6
15 267	43.	43.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	2.	0.0	12.	26.	0.0	0.0	6
15 268	40.	36.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	2.	1.	1.	0.0	10.	20.	0.0	0.0	6
32 269	60.	57.	1.	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	1.	0.0	1.	0.0	16.	36.	0.0	0.0	6
32 270	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	22.	27.	0.0	0.0	6

212	271	65.	63.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	5.	1.	1.	0.0	17.	36.	0.0	0.0	6
212	272	61.	60.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	1.	3.	6.	2.	1.	2.	11.	32.	0.0	0.0	6
212	273	41.	41.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	5.	5.	0.0	2.	0.0	10.	16.	0.0	0.0	6
18	275	33.	33.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.	27.	0.0	0.0	5
6	276	53.	52.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	1.	12.	36.	0.0	0.0	6
6	277	61.	60.	0.0	0.0	1.	0.0	0.0	0.0	0.0	2.	2.	0.0	1.	0.0	4.	0.0	1.	3.	17.	30.	0.0	0.0	5
6	278	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	0.0	1.	1.	8.	0.0	3.	2.	11.	22.	0.0	0.0	6
6	280	54.	53.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	1.	0.0	0.0	6.	0.0	3.	1.	16.	25.	0.0	0.0	6
6	281	48.	48.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	2.	3.	5.	2.	2.	0.0	11.	21.	0.0	0.0	6
6	282	43.	42.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	5.	1.	0.0	1.	3.	0.0	2.	1.	15.	13.	0.0	0.0	6
41	289	38.	38.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	3.	0.0	1.	0.0	13.	20.	0.0	0.0	3
41	290	59.	57.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	3.	0.0	1.	0.0	3.	1.	1.	2.	46.	0.0	0.0	0.0	6
41	291	57.	54.	2.	0.0	0.0	1.	0.0	0.0	0.0	0.0	10.	4.	0.0	0.0	2.	3.	0.0	0.0	35.	0.0	0.0	0.0	6
41	292	40.	38.	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	6.	0.0	1.	0.0	9.	22.	0.0	0.0	6
41	293	60.	59.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	2.	1.	1.	52.	1.	0.0	0.0	6
41	294	56.	54.	0.0	0.0	2.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.	0.0	0.0	0.0	6
31	295	55.	55.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	1.	0.0	52.	0.0	0.0	0.0	6
31	296	51.	50.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	10.	2.	1.	1.	34.	0.0	0.0	0.0	6
31	297	57.	56.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	4.	0.0	2.	2.	5.	2.	1.	10.	26.	0.0	0.0	6
6	298	59.	58.	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	9.	2.	0.0	0.0	2.	1.	2.	0.0	20.	21.	0.0	0.0	6
6	300	34.	33.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	2.	2.	0.0	3.	3.	0.0	2.	2.	4.	14.	0.0	0.0	5
6	301	42.	35.	0.0	0.0	1.	0.0	2.	0.0	4.	0.0	1.	0.0	0.0	0.0	3.	0.0	1.	0.0	15.	15.	0.0	0.0	5
19	302	48.	45.	1.	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	3.	0.0	1.	2.	13.	25.	0.0	0.0	6
19	303	45.	43.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	1.	0.0	15.	24.	0.0	0.0	6
19	304	51.	49.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	5.	1.	0.0	7.	6.	0.0	5.	3.	8.	14.	0.0	0.0	5
19	305	66.	63.	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	6.	1.	2.	4.	4.	8.	2.	1.	11.	24.	0.0	0.0	6
19	306	45.	41.	3.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	3.	2.	0.0	2.	8.	24.	0.0	0.0	6
19	307	49.	46.	0.0	0.0	2.	0.0	1.	0.0	0.0	0.0	3.	0.0	0.0	0.0	3.	3.	0.0	1.	9.	27.	0.0	0.0	6
19	308	69.	68.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	2.	0.0	8.	1.	2.	0.0	17.	36.	0.0	0.0	6

7	313	70.	68.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	7.	2.	0.0	0.0	0.0	0.0	0.0	1.	22.	36.	0.0	0.0	6
8	314	66.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	0.0	2.	0.0	1.	2.	1.	0.0	22.	33.	0.0	0.0	6
8	315	31.	30.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	2.	26.	0.0	0.0	0.0	5
8	316	58.	57.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	5.	1.	0.0	0.0	0.0	1.	0.0	0.0	24.	26.	0.0	0.0	6
8	317	32.	31.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	2.	13.	12.	0.0	0.0	5
8	318	37.	36.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	1.	16.	16.	0.0	0.0	6
8	319	54.	53.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	0.0	12.	37.	0.0	0.0	6
8	320	58.	56.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	2.	0.0	0.0	15.	36.	0.0	0.0	6
8	321	45.	45.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	2.	0.0	0.0	0.0	0.0	1.	1.	16.	20.	0.0	0.0	6
8	322	42.	41.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	1.	0.0	0.0	0.0	1.	2.	10.	24.	0.0	0.0	6
8	323	23.	23.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	1.	1.	0.0	0.0	0.0	18.	0.0	0.0	0.0	6
36	324	55.	53.	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	4.	0.0	0.0	0.0	1.	0.0	0.0	0.0	12.	36.	0.0	0.0	6
19	325	54.	53.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	5.	1.	0.0	0.0	1.	1.	1.	1.	6.	37.	0.0	0.0	6
19	326	60.	58.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	4.	0.0	0.0	2.	2.	0.0	0.0	0.0	22.	28.	0.0	0.0	6
19	327	38.	36.	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	1.	1.	2.	0.0	0.0	0.0	8.	21.	0.0	0.0	6
19	328	50.	50.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	1.	0.0	0.0	4.	2.	1.	0.0	8.	27.	0.0	0.0	6
119	329	14.	7.	1.	0.0	1.	0.0	1.	4.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	2.	3.	0.0	0.0	5
119	330	58.	56.	2.	0.0	0.0	0.0	0.0	0.0	0.0	2.	4.	2.	0.0	0.0	2.	0.0	0.0	0.0	18.	28.	0.0	0.0	6
119	331	53.	51.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	3.	0.0	0.0	0.0	2.	1.	2.	0.0	14.	29.	0.0	0.0	6

UNMATED FEMALES 23.

11 SEP67 B10S B FLT 0000

E	1120.	1.000000
H	1085.	0.968750
1	18.	0.016071
2	0.0	0.0
3A	12.	0.010714
3B	3.	0.002679
4A	0.0	0.0
4B	0.0	0.0
5	2.	0.001786
N	17.	0.015179
F	56.	0.050000
M	13.	0.011607
L	9.	0.008036
SL	18.	0.016071
P	42.	0.037500
E	11.	0.009821
M	22.	0.019643
L	24.	0.021429
	873.	0.779464
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.957420 0.978786

MATED FEMALES 67.

11 SEP67 B10S B FLT 0000

E	3337.	1.000000
H	3228.	0.967336
1	46.	0.013785
2	0.0	0.0
3A	30.	0.008990
3B	5.	0.001498
4A	8.	0.002397
4B	10.	0.002997
5	10.	0.002997
N	30.	0.008990
E	186.	0.055739
M	49.	0.014684
L	22.	0.006593
SL	57.	0.017081
P	165.	0.049446
E	47.	0.014085
M	64.	0.019179
L	55.	0.016482
	925.	0.277195
	1628.	0.487863

BINOMIAL CONF. LIMITS HATCH. 0.960839 0.973260

DATE	EXPERIMENT	EXPOSURE
11 SEP67	BIOS B GC1	4000

FEMALE NOS	SEX
337 380	M

STOCKS TREATED	MATED TO
LF	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
161	337	44.	28.	15.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	1.	2.	4.	1.	1.	9.	8.	0.0	0.0	6
161	338	21.	14.	6.	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	1.	7.	4.	0.0	0.0	4
147	339	40.	23.	15.	0.0	2.	0.0	0.0	0.0	0.0	2.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.	7.	0.0	0.0	6
147	340	61.	41.	16.	0.0	2.	0.0	0.0	1.	1.	0.0	4.	1.	0.0	0.0	0.0	0.0	0.0	0.0	20.	16.	0.0	0.0	6
147	341	49.	32.	16.	0.0	1.	0.0	0.0	0.0	0.0	2.	0.0	1.	0.0	0.0	1.	2.	1.	0.0	11.	14.	0.0	0.0	6
147	342	41.	33.	7.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	1.	26.	2.	0.0	0.0	5
147	343	63.	60.	1.	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	1.	53.	3.	0.0	0.0	6
121	344	42.	29.	13.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	3.	0.0	16.	8.	0.0	0.0	6
121	345	54.	31.	22.	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	19.	10.	0.0	0.0	6
121	346	43.	20.	22.	0.0	0.0	0.0	0.0	1.	0.0	2.	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	9.	0.0	0.0	6
121	347	38.	22.	14.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	3.	0.0	0.0	0.0	0.0	1.	1.	12.	5.	0.0	0.0	5
140	348	55.	34.	20.	0.0	0.0	0.0	0.0	0.0	1.	0.0	4.	0.0	1.	0.0	1.	0.0	1.	0.0	15.	12.	0.0	0.0	6
140	349	57.	35.	21.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	20.	11.	0.0	0.0	6
140	350	59.	38.	18.	0.0	0.0	2.	0.0	0.0	1.	1.	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	19.	16.	0.0	0.0	6
140	351	51.	33.	14.	0.0	3.	0.0	0.0	0.0	1.	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	14.	16.	0.0	0.0	6
187	352	42.	19.	20.	0.0	2.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	13.	5.	0.0	0.0	6

134	353	51.	38.	13.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	1.	0.0	0.0	1.	0.0	0.0	25.	8.	0.0	0.0	6
134	354	80.	78.	1.	0.0	1.	0.0	0.0	0.0	0.0	1.	9.	0.0	0.0	1.	0.0	0.0	0.0	1.	66.	0.0	0.0	0.0	6
134	355	51.	50.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	1.	0.0	46.	0.0	0.0	0.0	5
134	356	37.	24.	11.	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	19.	3.	0.0	0.0	5
187	361	45.	22.	22.	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	8.	10.	0.0	0.0	6
187	364	68.	47.	20.	0.0	0.0	0.0	0.0	1.	0.0	1.	1.	0.0	0.0	0.0	1.	0.0	0.0	1.	20.	23.	0.0	0.0	6
122	365	50.	29.	19.	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	0.0	1.	0.0	0.0	0.0	17.	9.	0.0	0.0	6
122	366	54.	33.	19.	0.0	0.0	0.0	0.0	1.	1.	1.	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	18.	11.	0.0	0.0	5
122	367	30.	15.	13.	0.0	1.	0.0	0.0	0.0	1.	0.0	3.	1.	1.	0.0	0.0	0.0	0.0	0.0	6.	4.	0.0	0.0	6
122	368	54.	33.	20.	0.0	0.0	0.0	0.0	0.0	1.	0.0	4.	0.0	0.0	0.0	1.	0.0	0.0	0.0	17.	11.	0.0	0.0	6
122	369	70.	40.	27.	0.0	0.0	0.0	0.0	2.	1.	1.	4.	0.0	0.0	0.0	4.	2.	1.	0.0	14.	14.	0.0	0.0	7
138	370	42.	32.	10.	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.	10.	0.0	0.0	5
138	371	56.	35.	18.	0.0	0.0	1.	0.0	2.	0.0	0.0	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.	16.	0.0	0.0	6
138	373	58.	31.	25.	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	17.	11.	0.0	0.0	6
138	375	50.	28.	21.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	2.	14.	10.	0.0	0.0	6
134	376	44.	30.	12.	0.0	0.0	0.0	0.0	2.	0.0	0.0	2.	0.0	0.0	0.0	1.	1.	0.0	0.0	9.	17.	0.0	0.0	6
134	377	59.	34.	20.	0.0	0.0	0.0	0.0	4.	1.	1.	1.	1.	0.0	0.0	1.	0.0	0.0	1.	14.	15.	0.0	0.0	6
134	378	52.	34.	17.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.	14.	0.0	0.0	5
134	379	57.	46.	9.	0.0	1.	0.0	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.	14.	0.0	0.0	6
134	380	75.	56.	16.	0.0	1.	0.0	0.0	2.	0.0	0.0	6.	0.0	0.0	1.	1.	0.0	0.0	1.	34.	13.	0.0	0.0	6

UNMATED FEMALES 2.

11 SEP67 B10S B GC1 4000

F	131.	1.000000
H	128.	0.977099
1	1.	0.007634
2	0.0	0.0
3A	2.	0.015267
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	1.	0.007634
F	11.	0.083969
M	0.0	0.0
L	0.0	0.0
SL	1.	0.007634
P	1.	0.007634
E	0.0	0.0
M	1.	0.007634
L	1.	0.007634
	112.	0.854962
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.936961 0.995258

MATED FEMALES 34.

11 SEP67 BIOS B GC1 4000

E	1712.	1.000000
H	1099.	0.641939
1	552.	0.322430
2	0.0	0.0
3A	22.	0.012850
3B	3.	0.001752
4A	1.	0.000584
4B	24.	0.014019
5	11.	0.006425
N	18.	0.010514
E	57.	0.033294
M	13.	0.007593
L	4.	0.002336
SL	5.	0.002921
P	19.	0.011098
E	13.	0.007593
M	11.	0.006425
L	13.	0.007593
	587.	0.342874
	359.	0.209696

BINOMIAL CONF. LIMITS HATCH. 0.619229 0.664650

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B GC1	2000

FEMALE NOS	SEX
385 428	M

STOCKS TREATED	MATED TO
LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
150	385	66.	48.	17.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	1.	0.0	16.	28.	0.0	0.0	6
150	386	7.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	1.	4.	0.0	0.0	4
150	387	62.	47.	13.	0.0	1.	0.0	0.0	1.	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	17.	25.	0.0	0.0	6
150	388	78.	66.	9.	0.0	0.0	0.0	1.	1.	1.	0.0	9.	4.	0.0	0.0	2.	0.0	0.0	0.0	22.	29.	0.0	0.0	6
150	389	57.	49.	8.	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	2.	1.	0.0	2.	0.0	0.0	0.0	27.	14.	0.0	0.0	6
150	390	54.	37.	16.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	1.	3.	0.0	0.0	1.	15.	15.	0.0	0.0	6
146	392	58.	51.	6.	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	0.0	1.	0.0	1.	0.0	0.0	0.0	29.	18.	0.0	0.0	6
146	394	53.	42.	8.	0.0	1.	2.	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	22.	16.	0.0	0.0	6
146	395	48.	42.	3.	0.0	1.	0.0	1.	1.	0.0	0.0	7.	0.0	0.0	0.0	2.	0.0	2.	6.	11.	14.	0.0	0.0	4
146	396	60.	43.	16.	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.	20.	0.0	0.0	6
146	397	57.	50.	5.	0.0	1.	0.0	0.0	1.	0.0	1.	2.	0.0	0.0	0.0	1.	0.0	0.0	1.	29.	16.	0.0	0.0	6
155	398	59.	45.	11.	0.0	1.	0.0	0.0	1.	1.	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	21.	21.	0.0	0.0	6
155	399	63.	59.	2.	0.0	1.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	3.	0.0	0.0	4.	47.	4.	0.0	0.0	6
155	400	68.	55.	12.	0.0	0.0	0.0	0.0	0.0	1.	0.0	5.	0.0	0.0	1.	0.0	0.0	0.0	1.	33.	15.	0.0	0.0	6
155	401	64.	55.	6.	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	6.	0.0	0.0	1.	27.	21.	0.0	0.0	6
155	402	53.	52.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.	0.0	0.0	0.0	6
155	403	33.	32.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	30.	0.0	0.0	0.0	5
155	404	61.	54.	6.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.	27.	0.0	0.0	5

87	409	43.	42.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	2.	0.0	38.	0.0	0.0	0.0	5
87	410	35.	22.	10.	0.0	0.0	0.0	0.0	1.	2.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	10.	10.	0.0	0.0	6
87	411	51.	46.	1.	0.0	2.	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.	0.0	0.0	0.0	6
87	412	41.	32.	9.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	13.	17.	0.0	0.0	6
87	413	55.	55.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.	0.0	1.	5.	2.	1.	4.	1.	33.	0.0	0.0	0.0	5
87	414	74.	65.	5.	0.0	3.	0.0	0.0	1.	0.0	0.0	6.	1.	0.0	0.0	0.0	0.0	0.0	3.	20.	35.	0.0	0.0	6
87	415	42.	32.	9.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	3.	0.0	0.0	3.	0.0	0.0	1.	11.	14.	0.0	0.0	6
87	416	45.	37.	6.	0.0	1.	1.	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	25.	8.	0.0	0.0	5
130	417	60.	56.	0.0	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	1.	1.	2.	3.	1.	47.	0.0	0.0	0.0	5
130	418	34.	25.	6.	0.0	0.0	0.0	1.	2.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	8.	14.	0.0	0.0	5
130	419	58.	45.	9.	0.0	2.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	9.	6.	0.0	0.0	1.	12.	17.	0.0	0.0	6
130	420	53.	39.	13.	0.0	0.0	1.	0.0	0.0	0.0	1.	3.	1.	1.	0.0	1.	0.0	0.0	0.0	10.	22.	0.0	0.0	6
130	421	49.	37.	12.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	1.	3.	1.	0.0	1.	14.	15.	0.0	0.0	6
130	422	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
130	423	44.	35.	7.	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	16.	17.	0.0	0.0	6
122	424	57.	55.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	3.	50.	0.0	0.0	0.0	6
122	425	14.	7.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	3.	0.0	0.0	2
91	426	45.	37.	6.	0.0	2.	0.0	0.0	0.0	0.0	1.	3.	1.	1.	1.	1.	1.	1.	0.0	13.	14.	0.0	0.0	6
60	427	71.	68.	1.	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	1.	1.	1.	7.	2.	54.	0.0	0.0	0.0	6
145	428	62.	48.	11.	1.	0.0	1.	0.0	0.0	1.	3.	0.0	0.0	2.	0.0	5.	1.	1.	0.0	14.	22.	0.0	0.0	6

UNMATED FEMALES 8.

11 SEP67 BIOS B GC1 2000

E	423.	1.000000
H	406.	0.959811
1	4.	0.009456
2	0.0	0.0
3A	8.	0.018913
3B	1.	0.002364
4A	1.	0.002364
4B	1.	0.002364
5	2.	0.004728
N	0.0	0.0
E	13.	0.030733
M	3.	0.007092
L	2.	0.004728
SL	7.	0.016548
P	7.	0.016548
E	4.	0.009456
M	16.	0.037825
L	7.	0.016548
	347.	0.820331
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.937811 0.977310

MATED FEMALES 30.

11 SEP67	BIOS B GC1		2000
F	1512.	1.000000	
H	1211.	0.800926	
1	249.	0.164683	
2	1.	0.000661	
3A	17.	0.011243	
3B	6.	0.003968	
4A	3.	0.001984	
4B	13.	0.008598	
5	12.	0.007937	
N	16.	0.010582	
E	47.	0.031085	
M	16.	0.010582	
L	6.	0.003968	
SL	13.	0.008598	
P	42.	0.027778	
E	6.	0.003968	
M	8.	0.005291	
L	26.	0.017196	
	536.	0.354497	
	495.	0.327381	

BINOMIAL CONF. LIMITS HATCH. 0.780799 0.821053

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B GC1	1000

FEMALE NOS	SEX
433 476	M

STOCKS TREATED MATED TO

LE R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
73	434	56.	49.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	6.	0.0	0.0	0.0	15.	25.	0.0	0.0	5
73	435	31.	26.	3.	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	2.	11.	11.	0.0	0.0	3
73	436	24.	19.	3.	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	3.	1.	0.0	0.0	0.0	0.0	0.0	7.	8.	0.0	0.0	3
73	437	63.	55.	5.	0.0	1.	0.0	0.0	1.	1.	0.0	4.	2.	0.0	1.	3.	0.0	0.0	0.0	18.	27.	0.0	0.0	5
73	438	55.	48.	7.	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	23.	20.	0.0	0.0	5
76	439	46.	41.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	1.	0.0	1.	0.0	1.	1.	18.	17.	0.0	0.0	5
76	440	41.	37.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	0.0	12.	21.	0.0	0.0	5
76	441	35.	29.	4.	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	13.	13.	0.0	0.0	5
78	442	8.	8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	3.	0.0	0.0	1
78	443	51.	44.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	2.	0.0	0.0	0.0	17.	24.	0.0	0.0	5
78	444	40.	34.	5.	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	0.0	0.0	2.	1.	0.0	4.	0.0	11.	14.	0.0	0.0	5
78	445	38.	32.	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	13.	18.	0.0	0.0	5
79	446	46.	38.	7.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	1.	0.0	0.0	3.	0.0	0.0	0.0	14.	18.	0.0	0.0	5
79	448	53.	45.	8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.	27.	0.0	0.0	5
79	449	50.	46.	2.	0.0	2.	0.0	0.0	0.0	0.0	1.	2.	3.	1.	0.0	0.0	0.0	0.0	0.0	15.	24.	0.0	0.0	5
103	450	46.	44.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	2.	0.0	0.0	0.0	0.0	1.	0.0	38.	0.0	0.0	0.0	5
103	451	59.	53.	4.	0.0	0.0	0.0	0.0	2.	0.0	0.0	3.	1.	0.0	0.0	1.	1.	2.	0.0	24.	21.	0.0	0.0	5
103	452	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	3.	3.	15.	28.	0.0	0.0	5

50 457	32.	28.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	8.	19.	0.0	0.0	6
54 458	55.	48.	6.	0.0	1.	0.0	0.0	0.0	0.0	1.	5.	0.0	0.0	0.0	1.	2.	3.	1.	23.	12.	0.0	0.0	6
54 459	50.	45.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	4.	1.	1.	0.0	12.	25.	0.0	0.0	6
54 460	44.	36.	8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	2.	0.0	12.	20.	0.0	0.0	5
59 461	67.	63.	4.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	2.	0.0	0.0	1.	0.0	1.	0.0	26.	31.	0.0	0.0	6
59 462	37.	31.	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	18.	11.	0.0	0.0	6
59 463	44.	41.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	1.	0.0	13.	24.	0.0	0.0	6
64 464	44.	29.	8.	0.0	4.	0.0	1.	1.	1.	0.0	5.	0.0	0.0	0.0	1.	0.0	0.0	0.0	14.	9.	0.0	0.0	6
64 465	65.	59.	6.	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	2.	0.0	1.	3.	0.0	3.	0.0	18.	29.	0.0	0.0	6
64 466	67.	62.	5.	0.0	0.0	0.0	0.0	0.0	0.0	6.	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	27.	27.	0.0	0.0	6
64 467	59.	54.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	1.	0.0	14.	36.	0.0	0.0	6
64 468	43.	36.	5.	0.0	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	2.	1.	11.	19.	0.0	0.0	4
67 469	37.	29.	6.	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	3.	0.0	2.	0.0	5.	17.	0.0	0.0	6
69 470	51.	44.	5.	0.0	1.	0.0	0.0	1.	0.0	5.	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	13.	23.	0.0	0.0	6
69 471	72.	63.	6.	0.0	2.	0.0	0.0	1.	0.0	1.	2.	4.	0.0	0.0	2.	0.0	0.0	0.0	21.	33.	0.0	0.0	6
69 472	82.	63.	10.	0.0	5.	0.0	0.0	3.	1.	0.0	3.	7.	0.0	0.0	1.	0.0	0.0	0.0	26.	26.	0.0	0.0	6
70 473	55.	52.	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	0.0	3.	1.	0.0	0.0	20.	25.	0.0	0.0	5
70 474	68.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	3.	0.0	1.	0.0	61.	0.0	0.0	0.0	7
71 475	76.	70.	2.	0.0	4.	0.0	0.0	0.0	0.0	7.	0.0	2.	0.0	0.0	1.	0.0	0.0	0.0	45.	15.	0.0	0.0	6
72 476	54.	52.	2.	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	3.	0.0	1.	5.	0.0	0.0	0.0	27.	12.	0.0	0.0	6

UNMATED FEMALES 2.

11 SEP67 B10S B GC1 1000

F	114.	1.000000
H	112.	0.982456
1	1.	0.008772
2	0.0	0.0
3A	1.	0.008772
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
F	4.	0.035088
M	4.	0.035088
L	0.0	0.0
SL	0.0	0.0
P	3.	0.026316
E	0.0	0.0
M	2.	0.017544
L	0.0	0.0
	99.	0.868421
	0.0	0.0

BINOMIAL CONF. LIMITS FATCH. 0.939745 0.997866

MATED FEMALES 36.

11 SEP67 B10S B GC1 1000

E	1782.	1.000000
H	1561.	0.875982
1	176.	0.098765
2	0.0	0.0
3A	25.	0.014029
3B	1.	0.000561
4A	2.	0.001122
4B	10.	0.005612
5	7.	0.003928
N	28.	0.015713
E	53.	0.029742
M	34.	0.019080
L	6.	0.003367
SL	9.	0.005051
P	54.	0.030303
F	5.	0.002806
M	28.	0.015713
L	11.	0.006173
	601.	0.337262
	732.	0.410774

BINOMIAL CONF. LIMITS HATCH. 0.860678 0.891285

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S B GC1	0500

FEMALE NOS	SEX
481 523	M

STOCKS TREATED	MATED TO
LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
81	481	58.	50.	8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	7.	1.	3.	1.	19.	17.	0.0	0.0	6
81	482	46.	40.	3.	0.0	1.	0.0	0.0	1.	1.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	15.	23.	0.0	0.0	6
81	483	60.	53.	4.	0.0	0.0	2.	0.0	1.	0.0	0.0	3.	2.	0.0	0.0	1.	0.0	1.	1.	22.	23.	0.0	0.0	6
81	484	41.	37.	2.	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	2.	1.	3.	4.	0.0	2.	0.0	9.	16.	0.0	0.0	5
81	485	65.	63.	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	4.	3.	0.0	0.0	2.	1.	1.	0.0	52.	0.0	0.0	0.0	6
129	486	51.	48.	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	4.	1.	1.	0.0	13.	27.	0.0	0.0	6
164	487	46.	43.	2.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	1.	0.0	0.0	0.0	0.0	1.	17.	21.	0.0	0.0	6
164	488	47.	43.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	3.	0.0	0.0	0.0	1.	1.	0.0	20.	17.	0.0	0.0	6
156	489	57.	49.	8.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	0.0	19.	26.	0.0	0.0	6
172	490	54.	53.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	1.	2.	1.	16.	31.	0.0	0.0	6
165	491	63.	58.	4.	0.0	1.	0.0	0.0	0.0	0.0	0.0	4.	2.	1.	0.0	1.	0.0	1.	3.	21.	25.	0.0	0.0	6
165	492	49.	40.	9.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	5.	3.	2.	0.0	7.	21.	0.0	0.0	6
176	493	37.	35.	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	2.	3.	0.0	2.	1.	6.	19.	0.0	0.0	6
176	494	40.	39.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	0.0	1.	1.	4.	2.	3.	4.	6.	14.	0.0	0.0	6
176	495	49.	48.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	1.	0.0	1.	0.0	1.	1.	17.	24.	0.0	0.0	6
164	496	43.	39.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.	0.0	0.0	0.0	11.	23.	0.0	0.0	4
164	497	26.	23.	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	1.	0.0	0.0	0.0	19.	0.0	0.0	0.0	3
164	498	42.	39.	2.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	1.	1.	0.0	16.	18.	0.0	0.0	6

154 495	64.	60.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	21.	37.	0.0	0.0	6
154 500	52.	46.	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	1.	1.	0.0	0.0	18.	24.	0.0	0.0	6
85 505	54.	49.	4.	0.0	0.0	1.	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	4.	0.0	1.	1.	20.	19.	0.0	0.0	6
85 506	43.	37.	1.	0.0	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	1.	31.	1.	0.0	0.0	6
85 507	49.	41.	6.	0.0	0.0	0.0	0.0	0.0	2.	1.	3.	2.	0.0	7.	1.	0.0	2.	3.	8.	14.	0.0	0.0	6
126 509	40.	36.	2.	0.0	2.	0.0	0.0	0.0	0.0	0.0	4.	0.0	0.0	0.0	0.0	1.	0.0	1.	15.	15.	0.0	0.0	6
126 510	46.	37.	4.	0.0	4.	0.0	0.0	0.0	1.	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.	23.	0.0	0.0	6
126 511	47.	42.	4.	0.0	0.0	1.	0.0	0.0	0.0	0.0	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.	21.	0.0	0.0	6
126 512	70.	65.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.	3.	4.	2.	3.	0.0	0.0	0.0	12.	35.	0.0	0.0	6
88 513	39.	36.	2.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	2.	2.	0.0	0.0	0.0	11.	19.	0.0	0.0	6
88 514	48.	44.	2.	1.	1.	0.0	0.0	0.0	0.0	0.0	6.	1.	0.0	0.0	1.	0.0	0.0	0.0	22.	14.	0.0	0.0	6
88 515	34.	32.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	13.	17.	0.0	0.0	6
88 516	13.	13.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	4.	8.	0.0	0.0	1
115 517	53.	49.	3.	0.0	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	1.	1.	16.	28.	0.0	0.0	6
115 518	49.	45.	4.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.	23.	0.0	0.0	6
115 519	44.	39.	3.	0.0	1.	0.0	0.0	0.0	1.	0.0	4.	0.0	3.	0.0	0.0	0.0	2.	0.0	6.	24.	0.0	0.0	6
94 520	64.	57.	3.	0.0	0.0	0.0	0.0	0.0	4.	0.0	1.	2.	0.0	0.0	1.	0.0	1.	0.0	16.	36.	0.0	0.0	6
94 521	47.	43.	3.	0.0	0.0	0.0	0.0	1.	0.0	0.0	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.	30.	0.0	0.0	6
81 522	54.	50.	4.	0.0	0.0	0.0	0.0	0.0	0.0	1.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.	25.	0.0	0.0	6
81 523	12.	11.	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	7.	0.0	0.0	5

UNMATED FEMALES 2.

11 SEP67 BIOS B GC1 0500

E	91.	1.000000
H	86.	0.945055
1	0.0	0.0
2	0.0	0.0
3A	5.	0.054945
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
E	4.	0.043956
M	6.	0.065934
L	0.0	0.0
SL	0.0	0.0
P	3.	0.032967
E	1.	0.010989
M	1.	0.010989
L	0.0	0.0
	71.	0.780220
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.877162 0.981916

MATED FEMALES 36.

11 SEP67 BIOS B GC1 0500

E	1705.	1.000000
H	1546.	0.906745
1	119.	0.069795
2	1.	0.000587
3A	21.	0.012317
3B	5.	0.002933
4A	0.0	0.0
4B	4.	0.002346
5	9.	0.005279
N	5.	0.002933
E	81.	0.047507
M	24.	0.014076
L	13.	0.007625
SL	20.	0.011730
P	51.	0.029912
E	14.	0.008211
M	27.	0.015836
L	22.	0.012903
	524.	0.307331
	765.	0.448680

BINOMIAL CONF. LIMITS HATCH. 0.892164 0.921126

DATE	EXPERIMENT	EXPOSURE
11 SEP67	B10S 6 GC3 IN P	2000

FEMALE NOS	SEX
601 620	M

STOCKS	TREATED	MATED TO
	LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
92	601	46.	36.	8.	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	2.	0.0	0.0	3.	16.	13.	0.0	0.0	6
92	602	29.	17.	12.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.	1.	2.	3.	0.0	0.0	0.0	0.0	1.	6.	0.0	0.0	6
92	603	74.	31.	39.	0.0	0.0	0.0	0.0	3.	1.	0.0	1.	0.0	0.0	1.	1.	0.0	0.0	0.0	10.	18.	0.0	0.0	6
92	604	52.	31.	19.	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	15.	14.	0.0	0.0	6
91	605	49.	30.	19.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	17.	0.0	0.0	6
91	606	41.	32.	9.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	1.	0.0	18.	11.	0.0	0.0	4
91	607	66.	65.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	5.	1.	0.0	1.	1.	0.0	3.	1.	53.	0.0	0.0	0.0	6
91	608	53.	38.	14.	0.0	0.0	0.0	0.0	0.0	1.	1.	3.	1.	0.0	2.	0.0	0.0	2.	1.	22.	6.	0.0	0.0	6
91	609	56.	39.	16.	0.0	1.	0.0	0.0	0.0	0.0	1.	1.	1.	0.0	1.	0.0	0.0	4.	0.0	22.	9.	0.0	0.0	6
91	610	62.	35.	27.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.	17.	0.0	0.0	6
93	611	55.	36.	15.	0.0	1.	0.0	0.0	3.	0.0	0.0	4.	0.0	0.0	5.	2.	0.0	1.	0.0	15.	9.	0.0	0.0	6
93	612	63.	42.	17.	0.0	0.0	0.0	0.0	2.	2.	1.	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	16.	22.	0.0	0.0	6
93	613	60.	38.	20.	0.0	0.0	0.0	0.0	1.	1.	0.0	3.	0.0	0.0	3.	4.	3.	3.	0.0	12.	10.	0.0	0.0	6
93	614	22.	15.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	8.	0.0	0.0	5
93	615	20.	9.	11.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	7.	0.0	0.0	6
66	616	63.	43.	19.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.	16.	0.0	0.0	6
66	617	5.	5.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	0.0	0.0	1
66	618	48.	32.	15.	0.0	0.0	0.0	0.0	1.	0.0	0.0	5.	0.0	0.0	0.0	0.0	0.0	0.0	1.	15.	11.	0.0	0.0	6
66	620	59.	41.	17.	0.0	0.0	0.0	0.0	1.	0.0	0.0	2.	0.0	1.	0.0	0.0	2.	0.0	0.0	14.	22.	0.0	0.0	6

UNMATED FEMALES 1.

11 SEP67 B10S B GC3 IN P 2000

E	66.	1.000000
H	65.	0.984848
1	0.0	0.0
2	0.0	0.0
3A	1.	0.015152
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
E	5.	0.075758
M	1.	0.015152
L	0.0	0.0
SL	1.	0.015152
P	1.	0.015152
E	0.0	0.0
M	3.	0.045455
L	1.	0.015152
	53.	0.803030
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.918963 0.999615

MATED FEMALES 18.

11 SEP67 B10S B GC3 IN P 2000

E	857.	1.000000
H	550.	0.641774
I	284.	0.331389
2	0.0	0.0
3A	5.	0.005834
3B	0.0	0.0
4A	0.0	0.0
4B	13.	0.015169
5	5.	0.005834
N	4.	0.004667
E	35.	0.040840
M	5.	0.005834
I	3.	0.003501
SL	16.	0.018670
P	10.	0.011669
E	5.	0.005834
M	11.	0.012835
L	5.	0.005834
	238.	0.277713
	218.	0.254376

BINOMIAL CONF. LIMITS FATCH. 0.609671 0.673876

DATE	EXPERIMENT	EXPOSURE
11 SEP67	BIOS B GC1 IN P	2000

FEMALE NOS	SEX
529 552	M

STOCKS	TREATED	MATED TO
	LF	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
75	529	43.	28.	12.	0.0	1.	0.0	1.	1.	0.0	3.	1.	0.0	0.0	0.0	1.	0.0	1.	0.0	15.	7.	0.0	0.0	6
75	530	50.	42.	8.	0.0	0.0	0.0	0.0	0.0	0.0	2.	2.	1.	1.	0.0	0.0	0.0	0.0	0.0	26.	10.	0.0	0.0	6
75	531	35.	34.	4.	0.0	1.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	17.	14.	0.0	0.0	6
75	532	61.	40.	21.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.	18.	0.0	0.0	6
75	533	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1
75	534	42.	24.	18.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.	15.	0.0	0.0	5
75	535	45.	28.	14.	0.0	0.0	0.0	0.0	3.	0.0	2.	2.	0.0	0.0	0.0	0.0	1.	0.0	0.0	16.	7.	0.0	0.0	6
75	536	56.	36.	18.	0.0	0.0	0.0	1.	0.0	1.	1.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.	10.	0.0	0.0	6
82	538	74.	49.	23.	0.0	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	24.	23.	0.0	0.0	6
82	539	65.	39.	25.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	3.	0.0	0.0	0.0	16.	18.	0.0	0.0	6
82	540	50.	34.	14.	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.	20.	0.0	0.0	6
82	541	55.	36.	19.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	1.	1.	6.	1.	1.	1.	6.	17.	0.0	0.0	6
82	543	52.	39.	13.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	3.	4.	3.	7.	0.0	0.0	0.0	12.	8.	0.0	0.0	6
86	544	63.	45.	15.	0.0	2.	0.0	1.	0.0	0.0	1.	2.	0.0	0.0	0.0	1.	0.0	0.0	0.0	21.	20.	0.0	0.0	6
86	545	65.	47.	15.	0.0	1.	0.0	0.0	1.	1.	0.0	2.	0.0	0.0	0.0	2.	0.0	0.0	0.0	29.	14.	0.0	0.0	6
86	546	43.	27.	15.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	13.	12.	0.0	0.0	6
86	547	62.	38.	18.	0.0	1.	2.	3.	0.0	0.0	2.	1.	0.0	1.	0.0	1.	3.	1.	0.0	8.	21.	0.0	0.0	6

UNMATED FEMALES 1.

11 SEP67 BIOS B GC1 IN P 2000

F	1.	1.000000
H	1.	1.000000
1	0.0	0.0
2	0.0	0.0
3A	0.0	0.0
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
F	0.0	0.0
M	0.0	0.0
L	0.0	0.0
SL	0.0	0.0
P	0.0	0.0
F	0.0	0.0
M	0.0	0.0
L	0.0	0.0
	1.	1.000000
	0.0	0.0

BINOMIAL CONF. LIMITS FATCH. 0.025016 1.000000

MATED FEMALES 16.

11 SFP67	BIOS B GC1	IN P	20C0
E	865.	1.000000	
H	586.	0.677457	
1	252.	0.291329	
2	0.0	0.0	
3A	10.	0.011561	
3B	2.	0.002312	
4A	6.	0.006936	
4B	7.	0.008092	
5	2.	0.002312	
N	12.	0.013873	
E	21.	0.024277	
M	4.	0.004624	
L	8.	0.009249	
SL	4.	0.004624	
P	21.	0.024277	
E	5.	0.005780	
M	5.	0.005780	
L	2.	0.002312	
	270.	0.312139	
	234.	0.270520	

BINOMIAL CONF. LIMITS HATCH. 0.646305 0.708608

DATE	EXPERIMENT	EXPOSURE
11 SEP67	BIOS B GC1 OUT	0000

FEMALE NOS	SEX
553 641	M

STOCKS TREATED MATED TO

LF R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
83	553	65.	63.	0.0	0.0	1.	1.	0.0	0.0	0.0	1.	5.	2.	0.0	1.	3.	2.	2.	0.0	15.	32.	0.0	0.0	6
83	554	49.	47.	2.	0.0	0.0	0.0	0.0	0.0	0.0	2.	3.	3.	2.	0.0	0.0	1.	3.	0.0	16.	17.	0.0	0.0	6
83	555	54.	50.	2.	0.0	1.	1.	0.0	0.0	0.0	1.	0.0	1.	1.	0.0	3.	2.	0.0	0.0	15.	27.	0.0	0.0	6
83	556	56.	55.	1.	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	2.	1.	4.	2.	0.0	0.0	12.	30.	0.0	0.0	6
83	557	55.	53.	1.	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	0.0	0.0	0.0	19.	31.	0.0	0.0	6
83	558	41.	33.	0.0	0.0	5.	1.	1.	0.0	1.	2.	1.	1.	0.0	1.	4.	1.	2.	0.0	12.	9.	0.0	0.0	6
83	559	18.	14.	0.0	0.0	1.	1.	0.0	2.	0.0	2.	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	3.	7.	0.0	0.0	5
83	560	38.	38.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	12.	24.	0.0	0.0	6
83	561	62.	57.	2.	0.0	3.	0.0	0.0	0.0	0.0	1.	2.	1.	1.	2.	5.	2.	2.	0.0	17.	24.	0.0	0.0	6
83	564	45.	44.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.	28.	0.0	0.0	6
83	565	53.	50.	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	4.	1.	0.0	0.0	0.0	1.	0.0	0.0	18.	26.	0.0	0.0	6
83	566	34.	28.	0.0	0.0	0.0	0.0	4.	0.0	2.	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	1.	4.	21.	0.0	0.0	6
86	567	48.	45.	1.	0.0	1.	0.0	0.0	1.	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	18.	25.	0.0	0.0	6
86	571	50.	46.	1.	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	1.	1.	0.0	0.0	43.	0.0	0.0	0.0	6
86	572	52.	51.	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	2.	2.	0.0	0.0	12.	33.	0.0	0.0	6
147	577	50.	49.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	1.	19.	27.	0.0	0.0	6
147	578	49.	49.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	2.	0.0	0.0	1.	1.	1.	3.	14.	25.	0.0	0.0	5
147	579	43.	43.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	1.	12.	28.	0.0	0.0	6
147	580	50.	50.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	3.	0.0	0.0	1.	12.	32.	0.0	0.0	6
147	581	57.	54.	2.	0.0	0.0	0.0	0.0	0.0	1.	0.0	2.	1.	0.0	0.0	3.	0.0	0.0	0.0	23.	25.	0.0	0.0	6
147	582	62.	61.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.	35.	0.0	0.0	6
121	583	65.	64.	1.	0.0	0.0	0.0	0.0	0.0	0.0	2.	7.	0.0	0.0	0.0	1.	0.0	1.	0.0	11.	42.	0.0	0.0	6

121	584	52.	49.	1.	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.	25.	0.0	0.0	6
121	585	66.	57.	5.	0.0	2.	0.0	0.0	2.	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	0.0	0.0	26.	29.	0.0	0.0	6
161	587	38.	38.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	0.0	0.0	13.	22.	0.0	0.0	5
161	588	7.	7.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	5.	1.	0.0	0.0	1
161	589	72.	69.	1.	0.0	1.	0.0	0.0	1.	0.0	0.0	7.	1.	0.0	0.0	0.0	0.0	0.0	0.0	30.	31.	0.0	0.0	6
161	590	48.	48.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	16.	28.	0.0	0.0	5
140	591	55.	51.	2.	0.0	1.	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.	31.	0.0	0.0	6
140	592	55.	54.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	1.	0.0	0.0	0.0	11.	39.	0.0	0.0	6
163	593	72.	71.	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	9.	1.	0.0	0.0	1.	0.0	3.	1.	17.	38.	0.0	0.0	6
163	594	59.	58.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	0.0	0.0	2.	8.	0.0	0.0	0.0	12.	33.	0.0	0.0	5
68	625	36.	36.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.	5.	8.	0.0	0.0	1.	0.0	0.0	2.	5.	8.	0.0	0.0	5
86	626	35.	35.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	1.	1.	0.0	0.0	0.0	0.0	0.0	2.	10.	19.	0.0	0.0	6
74	627	48.	44.	2.	0.0	2.	0.0	0.0	0.0	0.0	1.	2.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.	26.	0.0	0.0	6
74	628	59.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	3.	0.0	1.	3.	1.	1.	1.	19.	28.	0.0	0.0	6
74	629	15.	14.	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	13.	0.0	0.0	2
74	630	59.	55.	1.	0.0	3.	0.0	0.0	0.0	0.0	0.0	7.	0.0	0.0	0.0	3.	2.	0.0	1.	9.	33.	0.0	0.0	6
74	631	55.	50.	1.	0.0	4.	0.0	0.0	0.0	0.0	2.	1.	0.0	0.0	0.0	1.	0.0	1.	0.0	16.	29.	0.0	0.0	6
74	632	51.	50.	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	4.	0.0	0.0	0.0	1.	0.0	0.0	1.	17.	26.	0.0	0.0	6
91	633	64.	62.	0.0	0.0	2.	0.0	0.0	0.0	0.0	2.	8.	1.	0.0	0.0	0.0	1.	2.	1.	19.	28.	0.0	0.0	6
74	634	59.	58.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	1.	0.0	1.	2.	21.	32.	0.0	0.0	6
74	635	31.	31.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	0.0	0.0	18.	10.	0.0	0.0	5
74	636	36.	36.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	0.0	0.0	0.0	3.	0.0	12.	17.	0.0	0.0	6
60	637	54.	54.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	7.	0.0	1.	1.	18.	26.	0.0	0.0	6
60	639	46.	45.	1.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.	1.	0.0	0.0	1.	0.0	1.	1.	20.	18.	0.0	0.0	6
91	640	56.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	4.	0.0	0.0	1.	0.0	0.0	2.	1.	18.	28.	0.0	0.0	5
60	641	35.	35.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	1.	2.	0.0	2.	0.0	8.	20.	0.0	0.0	5

UNMATED FEMALES 1.

11 SEP67 BIOS B GC1 OUT 0000

F	50.	1.000000
H	46.	0.920000
1	1.	0.020000
2	0.0	0.0
3A	3.	0.060000
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
E	0.0	0.0
M	1.	0.020000
L	0.0	0.0
SL	0.0	0.0
P	1.	0.020000
E	1.	0.020000
M	0.0	0.0
L	0.0	0.0
	43.	0.860000
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.808144 0.977773

MATED FEMALES 47.

11 SEP67 B10S B GC1 OUT 0000

E	2309.	1.000000
H	2220.	0.961455
1	30.	0.012993
2	0.0	0.0
3A	36.	0.015591
3B	4.	0.001732
4A	6.	0.002599
4B	8.	0.003465
5	5.	0.002165
N	42.	0.018190
E	100.	0.043309
M	35.	0.015158
L	6.	0.002599
SL	10.	0.004331
P	68.	0.029450
F	19.	0.008229
M	28.	0.012126
L	24.	0.010394
	702.	0.304028
	1186.	0.513642

BINOMIAL CONF. LIMITS HATCH. 0.952746 0.969212

DATE	EXPERIMENT	EXPOSURE
7 SEP67	B10S B PRETEST	2000

FEMALE NOS	SEX
901 912	M

STOCKS	TREATED	MATED TO
	LE	R

B	F	E	H	1	2	3A	3B	4A	4B	5	N	E	M	L	SL	P	E	M	L					T
193	901	43.	27.	16.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.	12.	0.0	0.0	4
205	903	48.	35.	13.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.	17.	0.0	0.0	4
205	904	44.	30.	11.	0.0	1.	0.0	0.0	2.	0.0	0.0	0.0	1.	0.0	0.0	1.	0.0	0.0	0.0	18.	10.	0.0	0.0	4
189	905	40.	29.	10.	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	1.	0.0	17.	10.	0.0	0.0	4
189	907	46.	32.	14.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.	0.0	0.0	0.0	0.0	23.	7.	0.0	0.0	4
189	908	36.	19.	17.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	1.	0.0	6.	11.	0.0	0.0	4
207	909	51.	39.	11.	0.0	0.0	0.0	0.0	0.0	1.	1.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	23.	14.	0.0	0.0	4
207	911	34.	21.	12.	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	13.	7.	0.0	0.0	4
207	912	36.	19.	17.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.	0.0	0.0	0.0	11.	7.	0.0	0.0	4

UNMATED FEMALES 0.0

7 SEP67 B10S B PRETEST 2000

E	0.0	0.0
H	0.0	0.0
1	0.0	0.0
2	0.0	0.0
3A	0.0	0.0
3B	0.0	0.0
4A	0.0	0.0
4B	0.0	0.0
5	0.0	0.0
N	0.0	0.0
F	0.0	0.0
M	0.0	0.0
L	0.0	0.0
SL	0.0	0.0
P	0.0	0.0
F	0.0	0.0
M	0.0	0.0
L	0.0	0.0
	0.0	0.0
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.000000 0.000000

MATED FEMALES 9.

7 SEP67 B10S B PRETEST 2000

E	378.	1.000000
H	251.	0.664021
1	121.	0.320106
2	0.0	0.0
3A	2.	0.005291
3B	0.0	0.0
4A	0.0	0.0
4B	3.	0.007937
5	1.	0.002646
N	1.	0.002646
E	0.0	0.0
M	2.	0.005291
L	0.0	0.0
SL	2.	0.005291
P	5.	0.013228
E	0.0	0.0
M	2.	0.005291
L	0.0	0.0
	144.	0.380952
	95.	0.251323

BINOMIAL CONF. LIMITS HATCH. 0.616405 0.711638

67. TOTAL UNMATED FEMALES

7 SEP67	BIOS B PRETEST	2000
E	3486.	1.000000
H	3363.	0.964716
1	40.	0.011474
2	0.0	0.0
3A	60.	0.017212
3B	9.	0.002582
4A	3.	0.000861
4B	4.	0.001147
5	7.	0.002008
N	31.	0.008893
E	136.	0.039013
M	40.	0.011474
L	18.	0.005164
SL	61.	0.017499
P	94.	0.026965
E	44.	0.012622
M	68.	0.019507
L	44.	0.012622
	2827.	0.810958
	0.0	0.0

BINOMIAL CONF. LIMITS HATCH. 0.958382 0.970823

DOMINANT LETHALITY 67. UNMATED FEMALES 25. MATED FEMALES

11 SEP67 BIOS B FLT 4000

D	0.560736
H	0.439264
I	0.509377
2	0.0
3A	0.012522
3B	0.005963
4A	0.005191
4B	0.017493
5	0.010190
N	0.013277
E	0.006600
M	-0.002864
L	0.000393
SL	0.014253
P	-0.009374
E	0.015590
M	0.000417
L	0.005979
	0.000000
	0.394992

PER CENT HAPLOID EGGS 40.06185

PER CENT MALES IN ADULTS 57.84615

CONFIDENCE LIMITS DOM. LETHALITY 0.530852 0.591146

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.408854 0.469148

CONFIDENCE LIMITS HAPLOID EGGS= 0.37730 0.42339

CONFIDENCE LIMITS MALES IN ADULTS 0.54747 0.60946

DOMINANT LETHALITY 67. UNMATED FEMALES 32. MATED FEMALES

11 SEP67 B10S B FLT 2000

D	0.318018
H	0.681982
1	0.297729
2	0.0
3A	-0.001950
3B	-0.000342
4A	0.000543
4B	0.015183
5	0.006854
N	0.009229
E	0.043031
M	0.005930
L	0.006217
SL	0.010718
P	0.024581
F	0.005339
M	0.010672
L	0.004354
	0.000000
	0.561911

PER CENT HAPLOID EGGS 33.95867

PER CENT MALES IN ADULTS 42.59819

CONFIDENCE LIMITS DOM. LETHALITY 0.288901 0.346208

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.653792 0.711099

CONFIDENCE LIMITS HAPLOID EGGS= 0.31616 0.36353

CONFIDENCE LIMITS MALES IN ADULTS 0.39523 0.45674

DOMINANT LETHALITY 67. UNMATED FEMALES 33. MATED FEMALES

11 SEP67 B10S B FLT 1000

D	0.152123
H	0.847377
1	0.132857
2	0.000863
3A	0.005034
3B	0.000539
4A	0.002194
4B	0.010696
5	-0.000060
N	0.028717
F	0.041628
M	0.020623
L	0.002805
SL	0.010082
P	0.034219
F	0.012325
M	0.011749
L	0.011462
	0.000000
	0.674266

PER CENT HAPLOID EGGS 31.50226

PER CENT MALES IN ADULTS 35.61418

CONFIDENCE LIMITS DOM. LETHALITY 0.131308 0.172664

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.827336 0.868692

CONFIDENCE LIMITS HAPLOID EGGS= 0.29305 0.33734

CONFIDENCE LIMITS MALES IN ADULTS 0.32919 0.38309

DOMINANT LETHALITY 67. UNMATED FEMALES 32. MATED FEMALES

11 SEP67 B10S B FLT 0500

D	0.096012
H	0.903988
1	0.075932
2	0.0
3A	0.002932
3B	0.000900
4A	0.004140
4B	0.011663
5	0.000444
N	0.018972
E	0.054052
M	0.012961
L	0.011784
SL	0.040404
P	0.046010
E	0.026928
M	0.018579
L	0.006962
	0.000000
	0.667335

PER CENT HAPLOID EGGS 35.21417

PER CENT MALES IN ADULTS 39.77824

CONFIDENCE LIMITS DOM. LETHALITY 0.080184 0.113518

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.886482 0.919816

CONFIDENCE LIMITS HAPLOID EGGS= 0.33136 0.37312

CONFIDENCE LIMITS MALES IN ADULTS 0.37253 0.42304

DOMINANT LETHALITY 67. UNMATED FEMALES 15. MATED FEMALES

11 SEP67 B10S B FLT IN P 2000 UL

D	0.459415
H	0.540585
1	0.420500
2	0.0
3A	0.004821
3B	0.005445
4A	-0.000606
4B	0.011298
5	0.017956
N	0.010683
E	0.008830
M	-0.003243
I	0.008408
SL	0.002198
P	0.014898
F	-0.001830
M	0.003204
L	0.012898
	0.000000
	0.484278

PER CENT HAPLOID EGGS 41.33719

PER CENT MALES IN ADULTS 54.12844

CONFIDENCE LIMITS DOM. LETHALITY 0.411980 0.508117

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.491883 0.588020

CONFIDENCE LIMITS HAPLOID EGGS= 0.37698 0.44973

CONFIDENCE LIMITS MALES IN ADULTS 0.49451 0.58806

DOMINANT LETHALITY 67. UNMATED FEMALES 67. MATED FEMALES

11 SEP67 B10S B FLT 0000

D	0.031303
H	0.968697
1	0.014985
2	0.0
3A	0.004720
3B	0.000936
4A	0.003195
4B	0.003957
5	0.003510
N	0.009041
E	0.064425
M	0.016351
L	0.007335
SL	0.016864
P	0.061120
F	0.014844
M	0.019009
L	0.018486
	0.000000
	0.741222

PER CENT HAPLOID EGGS 34.18118

PER CENT MALES IN ADULTS 36.23188

CONFIDENCE LIMITS DOM. LETHALITY 0.024463 0.039167

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.960833 0.975537

CONFIDENCE LIMITS HAPLOID EGGS= 0.32583 0.35802

CONFIDENCE LIMITS MALES IN ADULTS 0.34387 0.38096

DOMINANT LETHALITY 67. UNMATED FEMALES 34. MATED FEMALES

11 SEP67 B10S B GC1 4000

D	0.594496
H	0.405504
1	0.550206
2	0.0
3A	0.009656
3B	0.001145
4A	0.000382
4B	0.023447
5	0.009661
N	0.011702
E	0.029105
M	0.004751
L	0.000266
SL	-0.007758
P	-0.000524
E	0.003910
M	-0.003157
L	0.003910
	0.000000
	0.363300

PER CENT HAPLOID EGGS 42.28009

PER CENT MALES IN ADULTS 62.05074

CONFIDENCE LIMITS DOM. LETHALITY 0.563509 0.624750

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.375250 0.436491

CONFIDENCE LIMITS HAPLOID EGGS= 0.39950 0.44630

CONFIDENCE LIMITS MALES IN ADULTS 0.58958 0.65143

DOMINANT LETHALITY 67. UNMATED FEMALES 30. MATED FEMALES

11 SFP67 B10S B GC1 2000

D	0.326277
H	0.673723
1	0.283667
2	0.001175
3A	0.006608
3B	0.005045
4A	0.002857
4B	0.014384
5	0.012541
N	0.011894
E	0.024927
M	0.009889
L	0.003040
SL	0.001685
P	0.028409
E	-0.002752
M	-0.005749
L	0.020748
	0.000000
	0.581632

PER CENT HAPLOID EGGS 43.71340

PER CENT MALES IN ADULTS 51.98836

CONFIDENCE LIMITS DOM. LETHALITY 0.295164 0.358185

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.641815 0.704836

CONFIDENCE LIMITS HAPLOID EGGS= 0.41217 0.46217

CONFIDENCE LIMITS MALES IN ADULTS 0.48939 0.55038

DOMINANT LETHALITY 67. UNMATED FEMALES 36. MATED FEMALES

11 SEP67 B10S 8 GC1 1000

D	0.187195
H	0.812805
1	0.160915
2	0.0
3A	0.011763
3B	-0.000877
4A	0.001309
4B	0.008790
5	0.005295
N	0.020568
E	0.023141
M	0.024494
L	0.002088
SL	-0.003812
P	0.032680
E	-0.004183
M	0.013011
L	0.001581
	0.000000
	0.703237

PER CENT HAPLOID EGGS 41.58803

PER CENT MALES IN ADULTS 45.08627

CONFIDENCE LIMITS DOM. LETHALITY 0.163618 0.211022

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.788978 0.836382

CONFIDENCE LIMITS HAPLOID EGGS= 0.39294 0.43871

CONFIDENCE LIMITS MALES IN ADULTS 0.42415 0.47757

DOMINANT LETHALITY 67. UNMATED FEMALES 36. MATED FEMALES

11 SEP67 B10S B GC1 0500

D	0.128631
H	0.871369
1	0.105384
2	0.000944
3A	0.009330
3B	0.003147
4A	-0.000525
4B	0.003077
5	0.007274
N	-0.000705
E	0.052691
M	0.015664
L	0.009126
SL	0.008210
P	0.031710
E	0.005520
M	0.013596
L	0.013075
	0.000000
	0.722481

PER CENT HAPLOID EGGS 37.89732

PER CENT MALES IN ADULTS 40.65167

CONFIDENCE LIMITS DOM. LETHALITY 0.108273 0.148573

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.851427 0.891727

CONFIDENCE LIMITS HAPLOID EGGS= 0.35586 0.40191

CONFIDENCE LIMITS MALES IN ADULTS 0.37970 0.43333

DOMINANT LETHALITY 67. UNMATED FEMALES 47. MATED FEMALES

11 SEP67 810S B GC1 OUT 0000

D	0.040500
H	0.959500
1	0.013903
2	0.0
3A	0.014619
3B	0.001223
4A	0.003641
4B	0.004854
5	0.002260
N	0.023765
E	0.045885
M	0.017367
L	0.001060
SL	-0.003566
P	0.030940
E	0.005594
M	0.007700
L	0.009058
	0.000000
	0.821695

PER CENT HAPLOID EGGS 37.48994

PER CENT MALES IN ADULTS 37.18220

CONFIDENCE LIMITS DOM. LETHALITY 0.030672 0.051435

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.948566 0.969328

CONFIDENCE LIMITS HAPLOID EGGS= 0.35531 0.39480

CONFIDENCE LIMITS MALES IN ADULTS 0.35002 0.39362

DOMINANT LETHALITY 67. UNMATED FEMALES 16. MATED FEMALES

11 SEP67 B10S B GC1 IN P 2000

D	0.502297
H	0.497703
1	0.466450
2	0.0
3A	0.008025
3B	0.002143
4A	0.010738
4B	0.012438
5	0.002502
N	0.016989
E	0.015056
M	0.000338
L	0.011805
SL	-0.003432
P	0.022596
E	0.001499
M	-0.002809
L	-0.004139
	0.000000
	0.439800

PER CENT HAPLOID EGGS 38.49012

PER CENT MALES IN ADULTS 53.57143

CONFIDENCE LIMITS DOM. LETHALITY 0.459392 0.544368

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.455632 0.540608

CONFIDENCE LIMITS HAPLOID EGGS= 0.35254 0.41740

CONFIDENCE LIMITS MALES IN ADULTS 0.49217 0.57926

DOMINANT LETHALITY 67. UNMATED FEMALES 18. MATED FEMALES

11 SEP67 B10S B GC3 IN P 2000

D	0.526414
H	0.473586
1	0.497999
2	0.0
3A	-0.000091
3B	-0.001345
4A	-0.000448
4B	0.022472
5	0.007827
N	0.002467
E	0.041792
M	0.002897
L	0.002635
SL	0.019280
P	0.003702
E	0.002299
M	0.009361
L	0.002299
	0.000000
	0.366854

PER CENT HAPLOID EGGS 34.24504

PER CENT MALES IN ADULTS 52.19298

CONFIDENCE LIMITS DOM. LETHALITY 0.485389 0.567803

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.432197 0.514611

CONFIDENCE LIMITS HAPLOID EGGS= 0.31013 0.37365

CONFIDENCE LIMITS MALES IN ADULTS 0.47608 0.56778

DOMINANT LETHALITY 67. UNMATED FEMALES 9. MATED FEMALES

7 SEP67 B10S B PRETEST 2000

D	0.602372
H	0.397628
1	0.593530
2	0.0
3A	-0.005270
3B	-0.002287
4A	-0.000762
4B	0.013951
5	0.003210
N	-0.002889
E	-0.024563
M	-0.000187
L	-0.004574
SL	-0.005524
P	0.001057
E	-0.011182
M	-0.007303
L	-0.011182
	0.000000
	0.473976

PER CENT HAPLOID EGGS 46.97559

PER CENT MALES IN ADULTS 60.25105

CONFIDENCE LIMITS DOM. LETHALITY 0.529398 0.668016

CONFIDENCE LIMITS DIPLOID HATCHABILITY 0.331836 0.470605

CONFIDENCE LIMITS HAPLOID EGGS= 0.42058 0.52122

CONFIDENCE LIMITS MALES IN ADULTS 0.53823 0.66442

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