Industrial **BIO-TEST Laboratories, Inc**
1810 FRONTAGE ROAD
NORTHBROOK, ILLINOIS 60062

MASTER

REPORT TO
ATOMIC ENERGY COMMISSION
TWO-YEAR CHRONIC ORAL TOXICITY STUDY WITH
LOW-DOSE IRRADIATED PAPAYAS
IN BEAGLE DOGS

CONTRACT NO. AT(11-1)-2014
REPORT NO. COO-2014-13

JANUARY 6, 1972

IBT NO. C7042

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Atomic Energy Commission, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

1
2

leg

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

Industrial BIO - TEST Laboratories, Inc.

1810 FRONTAGE ROAD
NORTHBROOK, ILLINOIS 60062

January 6, 1972

Mr. Harold N. Miller, Director
Contracts Division
U. S. Atomic Energy Commission
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

Dear Mr. Miller:

Re: IBT No. C7042 - Two-Year Chronic Oral
Toxicity Study with Low-Dose Irradiated Papayas
in Beagle Dogs - Contract No. AT(11-1)-2014

We are submitting herewith our laboratory report dated
January 6, 1972, prepared in connection with the above study.

Very truly yours,

J. C. Calandra
President

JCC/kjl

cc: Dr. Murray Schulman
Radiation Biologist, Biology Branch
Division of Biology and Medicine
U. S. Atomic Energy Commission
Washington, D. C. 20545

REPORT TO
ATOMIC ENERGY COMMISSION
TWO-YEAR CHRONIC ORAL TOXICITY STUDY WITH
LOW-DOSE IRRADIATED PAPAYAS
IN BEAGLE DOGS

CONTRACT NO. AT(11-1)-2014
REPORT NO. COO-2014-13

JANUARY 6, 1972

IBT NO. C7042

I. Introduction

A sample identified as Low-Dose Irradiated Papayas was received from the Atomic Energy Commission for the purpose of conducting a two-year chronic oral toxicity study using purebred beagle dogs. The following report presents the results of the investigation.

II. Summary

Two years of feeding 15% non-irradiated papayas or 15% papayas irradiated at 75,000 or 200,000 rads to purebred beagle dogs revealed the following:

A. Body Weights

Statistical analysis (analysis of variance) of overall weight gains after 24 months of testing revealed no significant differences between the positive control, negative control and two test groups.

B. Food Consumption and Food Efficiency

Statistical analyses (analysis of variance) revealed no significant differences between the positive control, negative control and two test groups with respect to food consumption or food efficiency.

C. Reactions

No untoward behavioral reactions were noted among any of the animals employed in the investigation.

D. Mortality

No deaths occurred among the parental generation during the investigation.

E. Hematologic and Blood Chemistry Studies

The results of these studies revealed no outstanding differences between dogs fed irradiated papayas and dogs fed non-irradiated papayas or control ration.

F. Urine Analyses

There were no significant differences between the urine of the animals in the positive control, negative control or two test groups.

G. Reproduction Data

1. Mating Data

Due to poor pup survival, female animal 22 and her mate, male animal 18, were retained from test group I after 24 months of testing for the purpose of further breedings.

Female 31 from test group II was bred twice during the study and failed to become pregnant on both occasions. This animal and her mate, male animal 27, were retained at the conclusion of the investigation. In addition, two proven animals, male dog 28 and female dog 32, were retained for the purpose of crossbreeding with animals 31 and 27.

With these two exceptions, the mating data for the positive control, negative control and two test groups were comparable.

2. Pup Survival

A detailed description of pup survival data, i. e. number of deaths, causes of death and descriptions of any abnormalities, is presented on pages 63 through 67. Gross pathologic examination of one pup from test group I revealed aplasia of the small intestine. The stomach of this animal was directly attached to the colon. This was the only anomaly noted among the pups during the investigation.

Differences in pup size and survival were not attributed to any particular group. General differences were due to the size of the pups at the time of birth, the number of pups in each litter and, most importantly, the manner in which each bitch cared for her pups.

3. Litter Weights

There was considerable variation in the weights of the pups whelped; however, none of these variations could be attributed to any particular diet group.

4. Hematologic and Blood Chemistry Studies

No significant differences with respect to the parameters investigated were noted at any of the levels tested.

H. Pathologic Studies

1. Organ Weight Data

One of the six animals sacrificed after 24 months of testing in test group I exhibited an elevated liver to body weight ratio when compared to the animals in the negative control group. The remaining five animals sacrificed in this group displayed liver to body weight ratios comparable to those of the negative control animals.

Animals in the positive control group and test group II compared favorably with the negative control animals with respect to liver to body weight ratios.

No other abnormalities were noted.

2. Femur Lengths

No significant abnormalities were noted with respect to femur lengths.

3. Gross and Histopathologic Findings

a. Parental Generation

No changes attributable to the ingestion of low-dose irradiated papayas were evident. All lesions were the result of spontaneous disease and are not uncommon in the dog.

b. Progeny

A section of heart from one pup in the T-I group (75,000 rads) revealed massive necrosis just under the endocardial surface of the left ventricle. The cause of this lesion was not apparent and its relationship to test material was not evident.

No changes attributed to the action of test material were observed in any of the pups examined.

Respectfully submitted,

INDUSTRIAL BIO-TEST LABORATORIES, INC.

Report prepared by:

Dennis C. Lindberg
Dennis C. Lindberg, B.S.
Senior Group Leader
Dog Toxicity

Report approved by:

Paul L. Wright
Paul L. Wright, Ph. D.
Section Head, Toxicology
M. L. Kepfinger
M. L. Kepfinger, Ph. D.
Manager, Toxicology

January 6, 1972
sjn:hp:psh

III. Procedure

A. Organization

The two-year toxicity study utilized a negative control group (fed a commercial diet), a positive control group (stock ration plus non-irradiated pureed papayas) and two test groups (stock ration plus papayas pureed after irradiation at 75,000 rads or 200,000 rads) each consisting of eight purebred beagle dogs (four males and four females). The beagles were all eligible for A.K.C. registration and had been immunized against rabies, distemper, infectious canine hepatitis and leptospirosis according to a predetermined immunization schedule.

All dogs were acquired from our own colony and were under observation for four weeks prior to the start of the investigation. Examinations for intestinal parasites were made prior to the start of the study and periodically throughout the investigation with appropriate treatment being administered when indicated.

For the first three months of the investigation, animals were housed individually. For the next six months they were housed in kennels equipped with outside runs, two dogs of the same sex and group being accommodated in a single kennel. For the remainder of the investigation, the animals were group housed with four animals per kennel.

The non-irradiated and irradiated papayas were incorporated into a stock diet at a dietary level of 15%.

An outline of the test organization and diet composition is presented in Table I.

TABLE 1

TEST MATERIAL: Low-Dose Irradiated Papayas

Test Organization and Diet Composition

Group	Number of Animals Tested		Non-irradiated Papayas (%)	Dietary Levels Irradiated Papayas (75,000 rads) (%)		Irradiated Papayas (200,000 rads) (%)	Stock* Ration (%)
	Males	Females					
NC	4	4	None	None		None	100.0
PC	4	4	15	None		None	85.0
T-I	4	4	None	15		None	85.0
T-II	4	4	None	None		15	85.0

* Purina Dog Meal, Ralston Purina Company, St. Louis, Missouri.

B. Parameters Investigated

Initially, the body weight of each dog in every group was determined and recorded. Thereafter, weighings were conducted weekly for the duration of the test.

At the beginning of each week, the appropriate dietary constituents for each of the groups were thoroughly blended in a Hobart mixer. Preweighed amounts were distributed into self-feeding units and maintained in excess of the animals' consumption. One such unit was available to each dog for one hour twice each day through the first six months of age and once a day thereafter. During these one-hour intervals, food was consumed on an ad libitum basis. Food consumption was then calculated and recorded. These determinations were made daily for the first three months and during weeks 20, 28, 36, 44, 52, 60, 76, 84, 92 and 100. Water was available to the animals at all times.

The dogs were under observation during the investigation and were examined daily for clinical signs or symptoms indicative of systemic toxicity.

The following hematologic and blood chemistry determinations were conducted upon each dog from all four groups just prior to the inception of the study and after 3, 6, 12, 18 and 24 months of testing.

Hematologic and Blood Chemistry Studies

total leukocyte count
erythrocyte count
hemoglobin
hematocrit
differential leukocyte count
serum glutamic-oxalacetic transaminase
serum alkaline phosphatase

In addition, bromosulfophthalein tests for liver function were performed on the same animals at 0, 6, 12, 18 and 24 months.

The following urological studies were conducted on all animals at 0, 6, 12, 18 and 24 months of testing:

Urological Studies

albumin
glucose
microscopic elements - leukocytes
 erythrocytes
 crystals

pH
24-hour volume
phenolsulfophthalein kidney function test

At the conclusion of the investigation, the dogs from the parental generation were sacrificed by electric shock. All major tissues and organs were examined grossly. The weights of the following organs were obtained: liver, left and right kidneys, heart, brain, spleen, left and right gonads, adrenal glands, thyroid gland and pituitary gland. The lengths of the left and right femurs were also recorded. The following tissues and organs excised from these animals were examined histologically (Hematoxylin-Eosin Stain):

Adrenal Glands	Muscle (skeletal)
Aorta (thoracic)	Pancreas
Bone (femur)	Peripheral Nerve (sciatic)
Bone Marrow (sternum)	Pituitary Gland
Brain (cerebrum, cerebellum, pons)	Prostate Gland
Caecum	Salivary Gland (submaxillary)
Colon	Small Intestine (duodenum, jejunum, ileum)
Esophagus	Spinal Cord
Gall Bladder	Spleen
Gonads	Stomach (cardia, fundus, pylorus)
Heart	Trachea
Kidneys	Thyroid Gland
Liver	Uterus
Lungs	Urinary Bladder
Lymph Nodes (cervical, mesenteric)	

During the second estrus period or the first estrus period after 12 months of age, each female was bred to a male from the same test group. The offspring were weaned at six weeks of age and observed for an additional two weeks.

The following information was recorded for each litter:

- Dam
- Sire
- Number of pups born (males, females, total)
- Number of pups born alive (males, females, total)
- Number of abnormal pups (males, females, total)
- Detailed description of abnormalities
- Litter weight at time of birth and weekly thereafter

In addition, the following determinations were conducted on the surviving pups after eight weeks of age:

- total leukocyte count
- erythrocyte count
- hemoglobin
- hematocrit
- differential leukocyte count
- serum glutamic-oxalacetic transaminase
- serum alkaline phosphatase

Any pups which died before attaining eight weeks of age or which were grossly abnormal were subjected to a complete gross and histopathological examination.

IV. Results

A. Body Weight Data

Individual body weight data are presented in Tables II and III.

Statistical analyses of overall body weight gains revealed no significant difference between the positive control, negative control or two test groups.

TABLE II

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Age at Inception of Test (months)	Body Weights at Week Indicated:													
				0	1	2	3	4	5	6	7	8	9	10	11	12	13
NC	None	1	3.0	3.6	3.8	4.0	4.7	4.9	5.3	5.2	5.7	5.7	5.9	6.0	6.1	6.3	6.9
		2	3.0	3.2	3.4	3.5	4.0	4.2	4.6	4.5	4.9	4.9	4.9	4.9	5.2	5.5	6.0
		3	3.0	3.6	4.0	4.5	5.0	5.3	5.7	5.9	6.0	6.0	6.4	6.5	6.3	6.5	6.7
		4	3.0	3.7	4.3	4.7	5.4	5.9	6.3	6.2	6.9	7.0	7.4	7.7	7.7	7.6	8.8
		Mean	3.0	3.5	3.9	4.2	4.8	5.1	5.5	5.5	5.9	5.9	6.2	6.3	6.3	6.5	7.1
PC	15% Non-Irradiated Papaya	9	3.0	3.3	3.7	3.9	4.6	4.8	5.1	5.4	5.7	5.8	6.0	5.9	6.1	6.3	6.4
		10	3.0	3.6	3.9	4.0	4.8	4.8	5.1	5.3	5.5	5.5	5.8	5.9	6.0	6.2	6.4
		11	3.0	4.2	4.4	5.0	5.8	6.3	6.5	6.7	7.5	7.2	7.6	8.0	7.9	7.7	8.8
		12	3.0	3.4	3.8	4.1	4.7	4.9	5.1	5.3	5.7	6.0	6.2	6.4	6.5	6.5	6.9
		Mean	3.0	3.6	4.0	4.2	5.0	5.2	5.5	5.7	6.1	6.1	6.4	6.6	6.6	6.7	7.1
I	15% Papaya Irradiated at 75,000 rads	17	3.0	2.8	3.0	3.3	4.0	4.0	4.2	4.3	4.6	4.8	5.1	5.2	5.4	5.6	5.6
		18	3.0	3.6	3.9	4.1	4.8	5.2	5.5	5.7	6.1	6.2	7.2	7.3	7.7	7.5	8.5
		19	3.0	3.4	3.8	4.1	4.8	5.2	5.4	5.4	5.8	6.0	6.2	6.5	6.7	6.7	7.2
		20	3.0	3.1	3.5	3.8	4.2	4.6	5.1	5.1	5.4	5.7	6.1	6.4	6.6	6.6	6.8
		Mean	3.0	3.2	3.6	3.8	4.5	4.8	5.0	5.1	5.5	5.7	6.2	6.4	6.6	6.6	7.0
II	15% Papaya Irradiated at 200,000 rads	25	3.0	3.4	3.5	3.9	4.6	5.2	5.3	5.4	5.8	6.2	6.2	6.4	6.5	6.8	7.5
		26	3.0	3.7	4.1	4.8	5.9	6.2	6.6	6.7	7.3	7.7	8.0	8.1	8.6	8.6	9.2
		27	3.0	3.0	3.3	3.6	4.2	4.3	4.6	4.7	5.3	5.5	5.5	6.8	5.8	6.0	6.5
		28	3.0	4.4	4.8	5.2	5.6	5.3	6.2	6.4	6.8	7.1	7.6	7.9	8.1	8.2	8.7
		Mean	3.0	3.6	3.9	4.4	5.1	5.3	5.7	5.8	6.3	6.6	6.8	7.3	7.2	7.4	8.0

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:												
			14	15	16	17	18	19	20	21	22	23	24	25	26
NC	None	1	6.4	6.4	6.5	6.8	7.2	7.5	7.6	7.9	7.9	8.5	8.7	8.4	8.2
		2	6.1	6.1	6.2	7.3	7.6	7.7	7.9	8.2	8.0	8.5	8.6	8.6	8.5
		3	6.8	6.8	6.8	7.2	7.3	7.5	7.7	7.6	7.5	7.7	8.0	8.0	7.9
		4	9.0	9.0	8.9	9.1	9.4	9.4	9.7	9.6	9.4	9.8	9.8	9.8	9.7
		Mean	7.1	7.1	7.1	7.6	7.9	8.0	8.2	8.3	8.2	8.6	8.7	8.7	8.6
PC	15% Non-Irradiated Papaya	9	6.3	6.3	6.4	6.9	6.9	7.2	7.4	7.8	7.3	7.5	7.8	7.4	7.8
		10	6.4	6.5	6.6	6.8	7.1	7.3	7.5	7.5	7.6	8.2	8.2	8.9	8.2
		11	9.1	9.1	9.1	10.1	10.2	10.5	10.9	10.6	10.9	11.6	12.0	11.6	11.7
		12	5.6	5.6	5.6	5.8	6.4	6.0	6.1	5.4	6.5	6.5	6.0	5.4	6.1
		Mean	6.9	6.9	6.9	7.4	7.7	7.8	8.0	7.8	8.1	8.4	8.5	8.4	8.4
I	15% Papaya Irradiated at 75,000 rads	17	5.6	5.6	5.7	5.9	6.0	5.8	6.3	6.3	6.3	6.6	6.7	6.9	6.5
		18	8.6	8.7	8.7	9.2	9.4	9.2	9.7	9.9	9.6	10.0	10.2	10.0	10.0
		19	6.9	6.8	6.8	7.1	7.4	7.5	8.0	8.0	7.8	8.2	8.5	8.4	8.5
		20	7.1	7.1	7.2	8.0	8.6	8.5	9.1	9.0	9.4	9.9	9.8	10.1	10.3
		Mean	7.1	7.1	7.1	7.6	7.9	7.8	8.3	8.3	8.3	8.7	8.8	8.8	8.8
II	15% Papaya Irradiated at 200,000 rads	25	7.5	7.5	7.6	7.9	8.0	8.0	8.4	8.7	8.9	9.0	9.3	9.3	8.9
		26	9.5	9.5	9.5	9.6	10.4	10.6	11.6	11.7	12.0	12.6	12.8	12.7	12.9
		27	6.3	6.4	6.4	6.8	6.9	7.1	7.6	7.7	9.3	7.9	8.2	8.1	7.9
		28	8.8	8.8	8.9	10.5	10.3	10.3	10.9	11.0	10.7	11.4	11.5	11.2	11.3
		Mean	8.0	8.0	8.1	8.7	8.9	9.0	9.6	9.8	9.7	10.2	10.4	10.3	10.2

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:												
			27	28	29	30	31	32	33	34	35	36	37	38	39
NC	None	1	8.4	8.4	8.4	8.6	8.7	9.1	9.0	9.0	9.1	9.1	9.0	9.0	9.3
		2	8.6	8.8	8.7	9.1	9.2	9.3	9.1	9.3	9.3	9.3	9.4	9.4	9.6
		3	7.9	7.9	7.8	8.1	7.9	8.2	8.2	8.2	8.5	8.2	8.2	8.4	8.5
		4	10.2	9.7	9.7	10.0	10.0	10.1	10.2	10.3	10.5	10.5	10.5	10.5	10.5
		Mean	8.8	8.7	8.6	8.9	9.0	9.2	9.1	9.2	9.4	9.3	9.3	9.3	9.5
PC	15% Non-Irradiated Papaya	9	8.2	7.9	8.0	8.1	7.6	8.1	8.5	8.5	8.5	8.1	8.4	8.8	8.8
		10	8.7	8.1	8.1	8.4	8.2	8.3	8.4	8.5	8.8	8.6	8.6	8.4	8.5
		11	12.0	11.8	12.0	12.2	12.2	12.5	12.6	12.8	13.3	13.2	13.1	12.8	13.2
		12	5.8	6.3	6.6	6.7	7.5	7.8	8.1	8.0	7.9	8.3	8.1	8.0	8.5
		Mean	8.7	8.5	8.7	8.8	8.9	9.2	9.4	9.4	9.6	9.6	9.6	9.5	9.8
I	15% Papaya Irradiated at 75,000 rads	17	6.5	6.5	6.6	6.8	6.8	6.8	7.0	7.0	7.2	6.6	7.0	7.0	7.1
		18	9.7	9.8	10.0	10.4	10.4	10.5	10.5	10.6	10.8	10.5	10.7	10.2	10.6
		19	8.1	8.1	8.2	8.3	8.2	8.6	8.5	8.7	9.0	9.0	8.8	8.5	8.5
		20	9.8	10.1	10.4	10.8	10.6	11.1	11.2	11.3	11.6	11.5	11.4	11.5	11.6
		Mean	8.5	8.6	8.8	9.1	9.0	9.2	9.3	9.4	9.6	9.4	9.5	9.3	9.4
II	15% Papaya Irradiated at 200,000 rads	25	9.0	9.3	9.0	9.3	9.1	9.3	9.2	9.3	9.4	9.4	9.3	9.4	9.6
		26	12.9	12.9	13.2	13.5	13.3	13.5	13.7	13.5	14.3	13.8	13.7	13.7	13.2
		27	7.7	7.8	7.5	8.0	7.8	8.2	8.2	8.4	8.4	8.3	8.5	8.5	8.8
		28	11.4	11.3	11.4	11.8	11.4	11.7	11.5	11.5	11.1	11.6	11.5	11.5	11.5
		Mean	10.2	10.3	10.3	10.6	10.4	10.7	10.6	10.7	10.8	10.8	10.8	10.8	10.8

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			40	41	42	43	44	45	46	47	48	49	50	51	52	53
NC	None	1	9.0	9.5	8.7	9.6	8.7	9.3	9.0	9.3	9.3	9.5	9.6	10.1	9.5	8.5
		2	9.6	9.6	9.1	9.1	8.8	9.4	9.3	9.3	9.4	9.6	9.6	9.5	9.2	8.8
		3	8.5	8.7	8.5	8.4	8.4	8.5	8.6	8.6	8.5	8.6	8.5	8.6	8.4	7.8
		4	10.5	10.7	10.3	10.3	10.2	10.5	10.5	10.7	10.9	11.0	10.9	11.0	10.8	10.3
		Mean	9.4	9.6	9.2	9.4	9.0	9.4	9.4	9.5	9.5	9.7	9.6	9.8	9.5	8.8
PC	15% Non-Irradiated Papaya	9	8.0	9.2	9.0	8.7	8.6	8.5	8.8	9.3	9.4	9.4	9.4	8.5	9.2	8.8
		10	8.6	8.5	8.4	8.3	8.6	8.7	8.7	9.0	8.8	8.8	8.9	9.0	8.7	8.3
		11	12.9	12.8	12.7	12.9	13.0	13.2	12.6	13.0	13.5	13.9	13.8	13.7	13.7	13.0
		12	8.7	9.1	9.1	9.1	8.8	8.2	9.4	9.6	9.5	9.8	9.7	9.5	9.7	9.0
		Mean	9.8	9.9	9.8	9.8	9.8	9.6	9.9	10.2	10.3	10.5	10.4	10.4	10.3	8.8
I	15% Papaya Irradiated at 75,000 rads	17	7.3	7.3	7.1	7.1	7.4	7.4	7.3	7.7	7.5	7.5	7.8	7.8	7.7	6.9
		18	10.5	10.7	10.5	10.5	10.4	10.6	10.7	10.7	10.6	10.9	11.0	10.8	11.1	10.1
		19	8.8	9.0	8.7	8.7	8.8	9.0	9.2	9.1	9.5	9.4	9.2	9.9	9.0	8.4
		20	11.5	12.0	11.5	11.9	11.5	12.0	12.2	12.3	12.3	12.4	12.5	12.5	12.6	11.7
		Mean	9.5	9.8	9.4	9.6	9.5	9.8	9.8	10.0	10.0	10.0	10.1	10.2	10.1	9.3
II	15% Papaya Irradiated at 200,000 rads	25	9.5	9.6	9.4	9.7	9.2	9.7	9.9	10.0	10.3	10.4	10.5	10.6	10.4	9.6
		26	13.6	13.8	13.4	13.5	13.7	14.0	14.1	14.3	14.1	14.5	14.5	14.2	14.3	13.4
		27	9.0	8.6	8.5	8.6	8.7	9.2	9.5	9.3	9.4	9.8	10.0	10.1	8.1	9.0
		28	12.0	11.7	11.6	11.7	11.1	11.6	12.0	13.3	12.2	12.1	12.2	12.1	10.0	11.1
		Mean	11.0	10.9	10.7	10.9	10.7	11.1	11.4	11.5	11.5	11.7	11.8	11.8	10.7	10.8

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			54	55	56	57	58	59	60	61	62	63	64	65	66	67
NC	None	1	9.3	9.3	9.5	9.7	9.7	9.6	9.7	9.6	9.7	9.5	9.8	10.0	10.0	10.0
		2	9.2	9.3	9.4	9.4	9.5	9.3	9.2	9.0	9.1	9.0	9.4	9.2	9.5	9.3
		3	8.4	8.4	8.6	8.4	8.4	8.2	8.5	8.2	8.4	8.8	8.5	8.3	8.5	8.6
		4	10.6	10.7	10.9	10.9	11.3	11.4	11.6	11.6	11.5	11.6	11.4	11.8	11.3	11.5
		Mean	9.4	9.4	9.6	9.6	9.7	9.6	9.8	9.6	9.7	9.7	9.8	9.8	9.8	9.8
PC	15% Non-Irradiated Papaya	9	9.3	9.3	9.5	9.6	9.6	9.6	9.7	9.8	9.7	10.0	9.4	9.6	9.8	9.9
		10	8.7	8.8	8.9	7.0	9.0	9.0	9.0	9.1	9.0	9.0	8.8	8.6	9.1	9.0
		11	13.7	13.5	13.5	13.8	14.1	14.0	14.1	14.0	14.0	14.1	14.2	13.8	14.0	14.0
		12	9.5	9.4	9.4	9.5	9.7	9.8	9.7	9.6	9.7	9.5	9.5	9.2	9.4	9.4
		Mean	10.3	10.2	10.3	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.5	10.3	10.6	10.6
I	15% Papaya Irradiated at 75,000 rads	17	7.4	7.4	7.6	7.5	7.6	7.5	7.7	7.6	7.6	7.4	7.4	7.5	7.6	7.5
		18	10.5	11.1	10.4	10.6	10.7	10.9	10.8	10.8	10.6	10.6	10.7	10.7	10.5	10.7
		19	9.0	9.1	9.0	9.0	9.2	9.3	9.3	9.3	9.3	9.4	9.4	9.5	9.2	9.4
		20	12.4	12.5	12.2	12.1	12.3	12.5	12.4	12.5	12.6	12.4	12.4	12.3	12.2	12.3
		Mean	9.8	10.0	10.3	9.8	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.9	10.0
II	15% Papaya Irradiated at 200,000 rads	25	10.2	10.1	10.0	9.8	10.2	10.0	10.0	10.1	10.0	10.2	10.0	10.6	10.6	10.4
		26	14.0	13.6	13.2	13.8	14.1	14.3	14.0	14.1	14.1	13.8	13.9	13.8	14.1	14.1
		27	7.5	9.8	9.5	9.7	9.9	9.9	9.7	9.9	10.0	10.0	9.6	9.6	9.8	9.8
		28	11.9	12.1	11.8	12.0	12.3	12.4	12.3	12.4	12.2	12.2	12.2	12.2	12.4	12.6
		Mean	11.4	11.4	11.1	11.3	11.6	11.6	11.5	11.6	11.6	11.6	11.4	11.6	11.7	11.7

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			68	69	70	71	72	73	74	75	76	77	78	79	80	81
NC	None	1	10.1	9.5	10.0	10.1	10.2	10.2	10.5	10.3	10.8	9.4	9.3	9.4	9.0	9.2
		2	9.6	9.0	9.3	9.6	9.6	9.8	9.8	9.6	9.2	9.0	8.9	9.2	9.8	9.6
		3	8.6	8.5	8.6	8.8	8.7	8.8	8.8	8.8	8.9	8.5	8.4	8.6	8.2	8.3
		4	11.5	10.8	11.0	11.3	11.6	11.5	11.6	11.7	11.2	11.0	10.7	11.3	10.5	10.8
		Mean	10.0	9.4	9.7	10.0	10.0	10.1	10.2	10.1	10.0	9.5	9.3	9.6	9.1	9.5
PC	15% Non-Irradiated Papaya	9	10.0	9.3	9.5	9.3	9.6	9.7	9.5	9.6	9.2	8.7	9.0	9.6	9.2	10.0
		10	9.0	9.0	9.0	9.0	9.2	9.3	9.1	8.9	9.2	9.0	9.0	9.2	9.2	9.3
		11	14.2	14.0	14.1	14.1	14.2	14.2	14.0	13.9	14.0	13.1	13.0	13.6	13.2	13.3
		12	9.4	9.0	9.0	9.2	9.4	9.5	9.4	9.5	9.5	8.8	8.9	9.4	9.0	9.2
		Mean	10.6	10.3	10.4	10.4	10.6	10.7	10.5	10.5	10.5	10.0	10.0	10.4	10.2	10.4
I	15% Papaya Irradiated at 75,000 rads	17	7.5	6.8	6.9	6.9	7.4	7.6	7.4	7.3	7.0	7.0	7.0	7.0	6.5	7.0
		18	10.7	10.7	10.8	10.8	10.7	10.4	10.5	10.7	10.8	10.8	10.3	10.8	10.3	10.5
		19	9.2	8.9	9.0	9.4	9.5	9.4	9.3	9.2	9.0	8.5	8.6	8.9	8.7	9.0
		20	12.4	12.4	12.5	12.5	12.4	12.7	12.7	12.7	12.8	12.0	12.4	12.6	12.0	12.7
		Mean	10.0	9.7	9.8	9.9	10.0	10.0	10.0	10.0	9.9	9.6	9.6	9.8	9.4	9.8
II	15% Papaya Irradiated at 200,000 rads	25	10.6	10.1	10.5	10.5	10.3	10.6	10.4	10.3	10.2	10.0	10.0	10.3	10.0	10.2
		26	14.5	13.8	14.3	14.3	14.4	14.6	14.5	14.3	14.7	13.0	13.5	14.3	14.9	14.7
		27	10.0	9.4	10.0	10.0	10.0	10.0	10.0	10.1	10.0	9.3	9.5	9.8	9.5	9.8
		28	12.3	12.0	12.3	12.3	12.2	12.3	12.3	12.1	12.2	11.0	11.4	11.9	10.5	10.8
		Mean	11.8	11.3	11.6	11.6	11.7	11.9	11.8	11.7	11.8	10.8	11.1	11.6	11.2	11.4

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:											
			82	83	84	85	86	87	88	89	90	91	92	93
NC	None	1	9.4	9.3	9.2	9.0	9.5	9.6	9.5	9.5	9.5	9.2	9.5	8.9
		2	9.8	9.8	9.6	9.1	9.5	9.9	9.8	9.8	10.1	9.9	9.9	9.3
		3	8.7	8.4	8.7	8.4	8.8	8.9	9.1	8.9	8.9	8.9	8.8	8.3
		4	10.9	10.8	11.0	10.4	10.7	11.1	11.6	11.4	11.5	11.5	11.6	10.8
		Mean	9.7	7.6	9.6	9.2	9.6	9.9	10.0	9.9	10.0	9.9	10.0	9.3
PC	15% Non-Irradiated Papaya	9	10.2	10.2	10.0	9.4	9.7	10.2	10.2	10.0	9.9	9.9	10.2	9.5
		10	9.0	8.9	9.1	8.5	9.2	9.4	9.5	9.2	9.4	9.2	9.4	8.9
		11	14.0	14.2	14.1	14.2	13.6	14.1	14.3	14.1	14.3	14.7	14.5	13.5
		12	9.8	9.6	9.6	9.0	9.3	9.7	9.7	9.6	9.6	9.5	9.9	9.2
		Mean	10.8	10.7	10.7	10.3	10.4	10.8	10.9	10.7	10.8	10.8	11.0	10.3
I	15% Papaya Irradiated at 75,000 rads	17	6.9	7.0	7.3	7.0	7.3	7.3	7.8	7.7	7.7	7.8	8.3	7.2
		18	10.9	10.4	10.4	10.4	10.3	10.7	10.7	10.4	10.5	10.3	10.6	10.0
		19	9.3	9.1	9.1	8.5	8.8	9.3	9.2	9.1	9.1	9.2	9.2	8.7
		20	13.0	12.6	12.8	12.1	12.2	12.4	12.3	12.3	12.2	12.0	12.4	11.9
		Mean	10.0	9.8	9.9	9.5	9.6	9.9	10.0	9.9	9.9	9.8	10.1	9.4
II	15% Papaya Irradiated at 200,000 rads	25	10.5	10.4	10.5	10.0	10.5	10.6	10.9	10.5	10.8	10.8	11.0	10.1
		26	14.5	14.2	14.4	13.1	13.8	14.3	14.4	14.2	14.3	14.9	14.6	13.5
		27	10.1	9.9	10.2	9.5	10.0	10.3	10.3	10.3	10.2	10.1	10.6	9.5
		28	11.9	11.7	11.9	11.8	11.8	11.6	12.4	12.1	12.0	12.4	12.6	12.0
		Mean	11.8	11.6	11.8	11.2	11.5	11.7	12.0	11.8	11.8	12.0	12.2	11.3

TABLE II continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Males, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:											Overall Weight Gain
			94	95	96	97	98	99	100	101	102	103	104	
NC	None	1	9.0	9.0	9.2	9.2	9.4	9.6	9.7	9.3	9.4	9.4	9.4	5.8
		2	9.4	9.6	9.8	9.7	9.8	10.1	9.9	9.3	9.4	9.4	9.5	6.3
		3	8.4	8.5	8.6	8.3	8.6	9.0	8.6	8.4	8.4	8.5	8.5	4.9
		4	10.5	10.9	10.9	11.0	11.1	11.4	11.4	10.9	11.0	11.1	11.3	7.6
		Mean	9.4	9.5	9.6	9.6	9.7	10.0	9.9	9.5	9.8	9.9	9.7	6.2
PC	15% Non-Irradiated Papaya	9	9.6	9.4	9.5	10.1	10.3	10.5	10.6	9.7	9.8	9.8	9.9	6.6
		10	9.0	9.1	9.4	9.2	9.2	9.3	9.6	9.4	9.5	9.6	9.4	5.8
		11	13.9	14.0	14.2	14.2	14.4	14.6	14.6	14.1	14.3	14.3	14.2	10.0
		12	9.3	9.4	9.5	9.5	9.6	9.8	9.8	9.1	9.2	9.6	9.2	5.8
		Mean	10.4	10.5	10.6	10.5	10.9	11.0	11.2	10.6	10.7	10.8	10.7	7.1
I	15% Papaya Irradiated at 75,000 rads	17	7.4	7.4	7.6	7.7	7.9	8.0	8.0	7.6	7.8	7.9	7.9	5.1
		18	10.0	10.1	10.2	10.5	10.6	10.9	11.1	10.7	11.0	10.9	10.8	7.2
		19	8.7	8.9	8.9	9.1	9.2	9.4	9.5	9.0	9.3	9.3	8.9	5.5
		20	12.0	12.0	12.2	12.4	12.6	12.8	12.6	12.5	12.5	12.6	12.4	9.3
		Mean	9.5	9.6	9.7	9.9	10.1	10.3	10.3	10.0	10.2	10.2	10.0	6.8
II	15% Papaya Irradiated at 200,000 rads	25	10.3	10.4	10.5	10.6	10.8	11.0	11.2	10.5	10.4	10.5	10.6	7.2
		26	14.0	14.0	14.0	14.1	14.1	14.3	14.6	14.0	14.1	14.2	14.3	10.6
		27	9.9	9.8	10.0	10.2	10.6	10.8	10.8	10.3	10.4	10.0	10.7	7.7
		28	11.9	12.1	12.0	12.1	12.4	12.6	12.3	11.9	12.0	12.0	12.1	7.7
		Mean	11.5	11.6	11.6	11.8	12.0	12.2	12.2	11.7	11.7	11.8	11.9	8.3

TABLE III

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Age at Inception of Test (months)	Body Weights at Week Indicated:													
				0	1	2	3	4	5	6	7	8	9	10	11	12	13
NC	None	5	3.0	3.1	3.5	3.8	4.2	4.7	4.9	5.2	5.4	5.4	5.7	6.0	6.1	6.4	6.8
		6	3.0	3.4	4.1	4.4	4.7	4.5	5.1	5.5	5.9	6.0	6.4	6.8	6.7	6.7	7.6
		7	3.0	3.6	4.0	4.1	4.7	4.8	5.2	5.4	5.7	5.6	6.1	6.5	6.4	6.5	6.8
		8	3.0	2.9	3.0	3.2	3.7	3.7	3.9	4.1	4.0	4.2	4.1	4.2	4.3	4.6	4.6
		Mean	3.0	3.2	3.6	3.9	4.3	4.4	4.8	5.1	5.3	5.3	5.6	5.9	5.9	6.1	6.5
PC	15% Non-Irradiated Papaya	13	3.0	3.9	4.2	4.8	5.4	5.7	6.2	6.2	6.9	7.0	6.9	7.3	7.4	7.6	8.1
		14	3.0	2.9	3.2	3.3	3.6	4.0	4.3	4.6	4.6	4.8	5.1	5.3	5.6	5.9	6.1
		15	3.0	2.5	2.5	2.8	3.3	3.4	3.6	3.8	4.1	4.2	4.7	4.6	4.8	4.8	5.3
		16	3.0	3.3	3.7	3.9	4.5	4.7	5.0	5.1	5.4	5.6	6.0	6.1	6.3	6.4	6.9
		Mean	3.0	3.2	3.4	3.7	4.2	4.5	4.8	4.9	5.3	5.4	5.7	5.8	6.0	6.2	6.6
I	15% Papaya Irradiated at 75,000 rads	21	3.0	2.4	2.7	2.7	2.8	4.3	4.7	4.8	5.3	5.5	6.1	6.2	6.5	6.7	7.2
		22	3.0	4.3	4.9	5.4	6.2	6.7	7.4	7.6	7.9	8.3	8.7	8.7	8.8	8.7	9.8
		23	3.0	3.1	3.4	3.6	4.1	4.2	4.1	3.9	4.5	5.2	5.2	5.2	5.5	5.8	6.0
		24	3.0	3.1	3.4	3.7	4.2	4.6	4.2	5.0	5.9	5.5	5.8	6.0	6.0	6.3	6.5
		Mean	3.0	3.2	3.6	3.8	4.3	5.0	5.3	5.3	5.7	6.1	6.5	6.5	6.7	6.9	7.4
II	15% Papaya Irradiated at 200,000 rads	29	3.0	3.1	3.4	3.8	4.5	5.0	5.0	5.3	5.4	5.6	5.8	6.1	6.2	6.5	6.8
		30	3.0	3.5	3.8	4.0	4.6	4.9	5.3	5.4	5.8	6.0	6.2	6.6	6.6	6.9	7.5
		31	3.0	3.0	3.5	3.8	4.5	4.8	5.0	5.0	5.4	5.8	5.9	6.3	6.4	6.5	6.9
		32	3.0	3.3	3.7	4.0	4.6	4.8	5.1	5.2	5.4	5.4	5.6	5.8	5.9	6.1	6.3
		Mean	3.0	3.2	3.6	3.9	4.6	4.9	5.1	5.2	5.5	5.7	5.9	6.2	6.3	6.5	6.9

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			14	15	16	17	18	19	20	21	22	23	24	25	26	27
NC	None	5	6.8	6.8	6.9	7.4	7.4	7.4	7.8	7.6	7.6	8.1	8.2	8.1	8.0	8.2
		6	7.5	7.4	7.4	8.6	8.9	8.6	9.0	9.0	9.0	9.3	9.4	9.5	9.1	9.6
		7	6.6	6.6	6.7	7.3	7.3	7.3	7.4	7.4	6.9	7.4	7.6	7.8	7.8	7.8
		8	4.5	4.6	4.6	5.1	4.9	4.9	5.2	5.1	4.9	5.1	5.2	5.4	5.1	5.3
		Mean	6.4	6.4	6.4	7.1	7.1	7.1	7.4	7.3	7.1	7.5	7.6	7.7	7.5	7.8
PC	15% Non-Irradiated Papaya	13	8.1	8.1	8.2	9.2	9.4	9.4	9.8	9.2	9.4	9.9	10.1	9.7	9.8	10.1
		14	6.4	6.5	6.6	7.4	7.6	8.0	8.2	8.2	8.0	9.0	9.4	9.1	9.1	9.5
		15	5.3	5.4	5.4	6.0	5.8	6.0	6.1	6.0	5.7	6.2	6.4	6.4	6.2	6.6
		16	7.0	7.0	7.1	7.5	7.5	7.5	7.8	7.4	7.6	7.9	8.0	7.9	7.8	8.0
		Mean	6.7	6.8	6.8	7.5	7.6	7.7	8.0	7.7	7.7	8.2	8.5	8.2	8.2	8.6
I	15% Papaya Irradiated at 75,000 rads	21	7.1	7.1	7.2	7.8	8.2	8.0	8.4	8.3	8.4	8.7	8.8	8.9	8.8	8.6
		22	10.0	9.9	9.9	10.5	11.0	11.0	11.5	11.6	11.5	12.0	12.3	12.1	12.3	11.9
		23	6.2	6.3	6.3	7.1	7.3	7.3	7.4	7.6	7.4	7.8	7.8	7.9	7.7	7.4
		24	6.2	6.2	6.3	6.5	6.4	6.0	5.4	4.9	6.2	6.3	5.7	6.4	5.7	5.7
		Mean	7.4	7.4	7.4	8.0	8.2	8.1	8.2	8.1	8.4	8.7	8.6	8.8	8.6	8.4
II	15% Papaya Irradiated at 200,000 rads	29	6.5	6.5	6.6	7.3	7.3	7.3	7.7	7.6	7.7	7.8	8.2	8.2	7.9	7.9
		30	7.5	7.6	7.6	7.9	7.9	8.0	8.4	8.2	8.2	8.6	8.9	9.1	9.0	8.9
		31	6.3	6.4	6.5	6.4	6.5	6.5	6.8	6.6	6.9	7.1	7.2	7.3	6.8	7.3
		32	6.5	6.6	6.7	7.1	7.1	7.1	7.6	7.6	7.6	7.8	8.0	8.1	7.6	7.6
		Mean	6.7	6.8	6.9	7.2	7.2	7.2	7.6	7.5	7.6	7.8	8.1	8.2	7.8	7.9

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:											
			28	29	30	31	32	33	34	35	36	37	38	39
NC	None	5	8.0	8.2	8.4	8.2	8.5	8.8	8.9	8.9	8.8	8.9	8.9	8.8
		6	9.7	9.4	9.9	9.7	9.5	9.8	9.8	9.8	10.0	10.1	9.9	10.0
		7	7.8	7.6	7.8	7.2	7.8	8.2	8.2	8.6	7.7	8.0	8.2	8.0
		8	5.4	5.4	5.4	5.2	5.4	5.4	5.5	5.8	5.2	5.5	5.7	5.8
		Mean	7.7	7.6	7.9	7.6	7.8	8.0	8.1	8.3	7.9	8.1	8.0	8.2
PC	15% Non-Irradiated Papaya	13	9.9	9.6	10.0	9.9	10.1	10.0	10.5	10.1	10.3	10.4	10.4	10.4
		14	9.0	9.5	9.8	9.8	10.0	9.8	10.1	10.3	10.5	10.6	10.5	10.5
		15	6.4	6.4	6.5	6.6	6.7	6.8	6.8	6.9	6.6	6.8	7.0	7.2
		16	7.9	7.8	8.1	8.0	8.2	8.3	8.3	8.7	8.4	8.5	8.5	8.4
		Mean	8.3	8.3	8.6	8.6	8.8	8.7	8.9	9.0	9.0	9.1	9.1	9.2
I	15% Papaya Irradiated at 75,000 rads	21	8.8	8.7	9.0	9.1	9.2	9.2	9.2	9.7	9.5	9.4	9.4	9.5
		22	12.5	12.2	12.7	13.0	13.2	12.8	13.1	13.5	13.6	13.5	13.3	13.0
		23	7.6	7.5	7.5	7.8	7.9	8.2	8.3	8.1	8.2	8.4	8.2	8.3
		24	6.4	6.8	6.9	7.4	7.8	7.9	7.8	7.5	8.0	7.3	7.4	7.5
		Mean	8.8	8.8	9.0	9.3	9.5	9.5	9.6	9.7	9.8	9.6	9.6	9.8
II	15% Papaya Irradiated at 200,000 rads	29	7.8	7.6	7.9	7.9	8.0	7.7	7.8	8.1	7.7	7.8	8.0	8.1
		30	8.7	8.0	8.8	9.2	9.2	9.2	9.5	9.6	9.7	9.5	9.5	9.5
		31	7.3	7.1	7.2	7.2	8.0	7.8	7.9	7.9	8.0	8.0	8.0	8.3
		32	7.8	8.8	8.3	8.1	8.5	8.5	8.6	8.7	8.5	8.5	8.5	8.5
		Mean	7.9	7.9	8.0	8.1	8.4	8.3	8.4	8.6	8.5	8.4	8.5	8.6

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			40	41	42	43	44	45	46	47	48	49	50	51	52	53
NC	None	5	8.8	9.1	8.8	8.7	8.5	8.9	8.9	9.3	10.2	10.2	10.6	10.4	8.9	8.8
		6	10.2	10.5	10.4	10.1	10.2	10.1	10.7	11.8	13.6	13.7	14.4	9.4	9.4	10.3
		7	8.4	8.5	8.1	8.2	8.0	8.2	8.6	8.6	8.9	9.0	8.9	8.8	8.9	8.2
		8	5.9	6.0	5.8	5.8	5.6	5.8	6.1	6.2	6.3	6.3	6.3	6.8	6.0	5.4
		Mean	8.3	8.5	8.3	8.2	8.1	8.2	8.6	8.8	9.8	9.8	10.0	8.8	8.3	8.2
PC	15% Non-Irradiated Papaya	13	10.5	10.5	10.5	10.3	10.5	10.6	10.6	10.7	11.0	10.6	10.9	10.9	10.6	10.5
		14	10.6	10.3	10.5	10.6	10.3	10.8	11.7	12.3	12.7	9.6	9.7	7.9	7.8	8.5
		15	7.1	7.2	7.2	7.2	7.1	7.3	7.7	8.0	9.1	7.1	7.4	6.1	6.4	6.8
		16	8.5	8.6	8.5	7.8	7.3	7.5	8.0	8.5	8.9	8.8	9.1	8.7	8.9	8.6
		Mean	9.2	9.2	9.2	9.0	8.8	9.0	9.5	9.9	10.4	9.0	9.3	8.4	8.4	8.6
I	15% Papaya Irradiated at 75,000 rads	21	9.2	9.4	9.3	9.2	9.4	9.1	9.7	9.5	10.0	10.0	10.2	10.1	9.9	9.5
		22	12.9	13.3	12.9	12.8	13.0	12.9	13.1	13.2	13.5	13.4	13.6	13.5	13.6	12.6
		23	8.4	8.5	8.3	8.2	7.9	8.3	8.2	8.3	8.5	8.5	8.5	8.5	8.5	7.8
		24	7.6	7.7	7.4	7.6	7.8	8.0	8.4	8.6	9.7	9.0	9.2	9.6	10.4	10.7
		Mean	9.5	9.7	9.5	9.4	9.5	9.6	9.8	9.9	10.4	10.2	10.4	10.4	10.6	10.2
II	15% Papaya Irradiated at 200,000 rads	29	8.2	8.2	8.2	8.1	8.3	8.2	8.5	8.7	8.8	8.8	9.0	9.1	8.7	8.3
		30	9.6	9.5	9.3	9.4	9.4	9.7	9.5	9.7	9.6	9.7	9.8	9.7	10.0	9.3
		31	8.3	8.5	8.3	8.4	8.1	8.2	8.2	8.6	8.6	8.3	8.4	8.5	8.3	7.8
		32	8.5	8.3	8.0	7.9	7.9	8.1	8.0	8.1	8.0	7.9	8.6	8.1	8.1	7.4
		Mean	8.6	8.6	8.4	8.4	8.4	8.6	8.6	8.8	8.8	8.7	9.0	8.8	8.8	8.2

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			54	55	56	57	58	59	60	61	62	63	64	65	66	67
NC	None	5	8.8	8.5	8.6	9.4	8.5	8.3	8.6	8.6	8.8	9.0	8.8	9.0	9.2	9.0
		6	9.0	9.8	9.9	9.9	10.1	10.4	10.7	10.7	10.8	11.0	11.3	11.1	11.5	11.4
		7	8.6	8.8	8.9	8.8	8.8	9.3	9.2	9.0	8.9	8.8	9.0	8.8	9.0	9.0
		8	5.9	6.1	6.0	6.1	6.3	6.3	6.3	6.3	6.4	6.6	6.8	6.7	6.8	6.9
		Mean	8.1	8.3	8.4	8.6	8.4	8.6	8.7	8.6	8.7	8.8	9.0	8.9	9.1	9.1
PC	15% Non-Irradiated Papaya	13	10.6	10.7	10.8	10.8	10.7	10.8	10.9	11.0	11.0	11.1	11.1	11.3	11.5	11.4
		14	8.2	8.2	8.8	9.4	9.5	10.0	9.9	10.0	10.1	10.4	10.6	10.7	10.9	11.0
		15	6.4	6.4	6.5	6.8	7.1	7.2	7.2	7.4	7.3	7.6	7.4	7.6	7.5	7.6
		16	9.1	9.1	9.2	9.4	9.6	9.7	9.6	9.5	9.9	9.7	9.9	10.0	10.2	10.2
		Mean	8.6	8.6	8.8	9.1	9.2	9.4	9.4	9.5	9.7	9.8	9.8	9.9	10.0	10.0
I	15% Papaya Irradiated at 75,000 rads	21	9.8	10.0	10.0	10.0	10.1	10.9	11.7	12.6	13.0	10.2	9.7	10.5	10.1	10.1
		22	13.5	13.6	13.5	13.5	13.7	13.8	13.9	14.0	14.0	13.9	14.2	14.0	14.6	14.3
		23	8.2	8.6	8.3	8.6	8.7	8.7	9.0	9.0	8.9	8.8	8.8	8.7	8.7	9.0
		24	11.6	12.2	8.6	9.0	10.0	9.0	8.8	8.8	8.8	8.7	8.6	8.8	8.6	8.5
		Mean	10.8	11.1	10.3	10.3	10.6	10.6	10.8	11.1	11.2	10.4	10.3	10.4	10.5	10.6
II	15% Papaya Irradiated at 200,000 rads	29	8.6	8.6	8.5	8.5	8.6	8.6	8.7	8.8	8.8	8.8	8.8	8.8	9.0	9.1
		30	9.9	10.1	9.9	10.2	10.3	10.3	10.2	11.0	12.1	12.7	10.4	10.7	9.8	9.7
		31	8.3	8.4	8.3	8.2	8.4	8.4	8.2	8.3	8.4	8.6	8.8	8.8	9.1	8.9
		32	7.8	7.8	7.9	7.9	8.1	8.2	8.4	8.4	8.4	8.4	8.7	9.0	9.0	9.2
		Mean	8.6	8.7	8.6	8.7	8.8	8.9	8.9	9.1	9.4	9.6	9.2	9.3	9.2	9.2

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:													
			68	69	70	71	72	73	74	75	76	77	78	79	80	81
NC	None	5	8.8	9.0	9.3	9.4	9.6	9.8	9.6	9.6	9.6	9.5	9.4	9.5	8.9	9.1
		6	11.1	11.5	11.4	11.3	11.4	11.5	11.5	11.5	11.2	11.3	11.5	11.8	11.3	11.4
		7	9.1	8.5	8.8	8.9	9.1	9.1	8.9	9.0	9.2	8.3	8.5	9.0	8.5	9.0
		8	6.9	6.5	7.0	7.7	8.1	8.6	6.6	6.3	6.8	6.9	7.1	7.0	6.1	6.2
		Mean	9.0	8.9	9.3	9.3	9.6	9.8	9.2	9.1	9.2	9.0	9.1	9.3	8.7	8.9
PC	15% Non-Irradiated Papaya	13	11.2	12.1	12.6	13.5	14.3	10.9	11.1	11.1	11.2	11.1	11.2	11.3	9.9	10.0
		14	10.8	11.0	11.0	11.2	11.5	11.5	11.6	11.7	11.2	11.1	11.2	11.8	11.2	11.3
		15	7.8	7.5	7.7	7.8	7.8	7.9	7.8	7.9	7.6	7.5	7.9	8.0	7.5	8.0
		16	10.1	10.2	10.7	11.5	12.2	12.9	9.8	8.9	9.1	9.0	9.3	9.5	8.2	8.5
		Mean	10.0	10.2	10.5	11.0	11.4	10.8	10.1	9.9	9.8	9.8	9.9	10.2	9.2	9.5
I	15% Papaya Irradiated at 75,000 rads	21	10.0	10.6	10.7	10.8	10.6	10.4	10.0	10.2	10.2	9.5	9.7	10.3	10.4	10.1
		22	14.2	13.7	14.1	15.6	16.6	17.4	14.0	12.3	13.0	14.0	14.4	14.4	14.2	13.2
		23	8.9	8.5	8.6	8.6	8.7	8.8	8.8	8.8	8.7	8.0	8.2	8.6	8.2	9.0
		24	8.5	8.5	8.4	8.5	8.5	8.7	8.7	9.1	9.0	9.2	9.3	9.6	9.2	10.0
		Mean	10.4	10.3	10.4	10.9	11.1	11.3	10.4	10.1	10.2	10.2	10.4	10.7	10.5	10.6
II	15% Papaya Irradiated at 200,000 rads	29	9.1	8.8	9.0	9.0	8.9	9.0	8.9	8.9	9.2	8.9	9.0	9.8	10.2	10.5
		30	9.7	9.6	9.2	9.2	9.5	9.6	9.5	9.5	9.4	9.1	9.2	9.2	9.2	9.5
		31	8.8	8.6	8.7	8.7	8.9	8.9	8.7	8.5	8.5	8.0	8.1	8.3	8.2	8.4
		32	10.0	10.5	11.6	11.7	9.1	9.2	9.1	8.9	8.7	8.4	8.5	7.9	7.4	8.0
		Mean	9.4	9.4	9.6	9.6	9.1	9.2	9.0	9.0	9.0	8.6	8.7	8.8	8.8	9.1

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:											
			82	83	84	85	86	87	88	89	90	91	92	93
NC	None	5	9.3	9.4	9.5	9.0	9.3	9.7	9.5	9.3	9.2	9.0	9.3	8.8
		6	11.8	11.6	11.7	11.4	11.7	11.2	11.4	11.4	11.6	11.0	11.8	11.3
		7	9.4	9.4	9.7	10.7	10.8	12.1	12.6	9.2	10.0	10.0	10.2	9.2
		8	6.3	6.3	7.0	6.0	6.4	6.8	6.7	6.5	6.4	6.2	6.5	6.0
		Mean	9.2	9.0	9.5	9.3	9.6	10.0	10.0	9.1	9.3	9.0	9.4	8.8
PC	15% Non-Irradiated Papaya	13	10.5	10.6	11.1	10.0	11.1	11.4	11.5	11.6	11.5	11.6	11.6	11.0
		14	11.7	11.6	11.7	11.0	11.2	11.4	11.1	11.3	11.3	11.5	11.5	11.0
		15	8.3	8.4	8.5	8.0	8.4	8.3	8.1	8.1	8.0	8.0	8.5	7.7
		16	8.5	8.5	9.4	8.5	9.3	10.0	10.0	10.0	10.0	9.6	10.0	9.6
		Mean	9.8	9.8	10.2	9.4	10.0	10.3	10.2	10.2	10.2	10.2	10.4	9.8
I	15% Papaya Irradiated at 75,000 rads	21	10.5	10.5	10.7	10.6	10.6	11.1	11.2	11.4	11.0	11.0	12.2	12.4
		22	13.0	13.0	13.6	13.0	13.3	13.6	13.6	13.7	13.7	13.9	14.4	13.5
		23	9.4	9.6	10.8	8.8	8.7	8.9	9.0	9.0	9.5	8.2	8.4	8.0
		24	10.2	10.3	10.5	9.8	9.9	9.8	9.5	9.2	9.2	9.0	9.0	9.0
		Mean	10.8	10.8	11.4	10.6	10.6	10.8	10.8	10.8	10.8	10.5	11.0	10.7
II	15% Papaya Irradiated at 200,000 rads	29	11.3	8.5	8.2	8.5	8.7	8.6	8.7	8.8	8.8	8.9	9.3	8.7
		30	9.9	9.8	10.3	9.8	10.0	10.3	10.3	10.5	10.5	10.5	10.8	10.0
		31	8.5	8.1	8.4	8.2	8.4	8.7	8.7	8.7	8.7	8.7	9.1	8.5
		32	8.1	8.0	8.4	8.6	8.5	8.7	8.7	8.8	8.8	8.8	9.0	8.2
		Mean	9.5	8.6	8.8	8.8	8.9	9.1	9.1	9.2	9.2	9.3	9.6	8.8

TABLE III continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Body Weight Data for Females, kilograms

Group	Dietary Level (%)	Dog Number	Body Weights at Week Indicated:											Overall Weight Gain
			94	95	96	97	98	99	100	101	102	103	104	
NC	None	5	9.0	9.0	9.2	9.2	9.3	9.5	9.4	9.1	9.1	9.1	9.1	6.0
		6	11.4	11.5	11.5	11.5	11.6	11.6	11.7	11.5	11.4	11.4	11.4	8.0
		7	9.2	9.4	9.4	9.5	9.7	9.8	9.7	8.9	9.0	9.2	9.5	5.9
		8	6.1	6.2	6.3	6.4	6.5	6.4	6.3	6.0	6.3	6.4	6.5	3.6
		Mean	8.9	9.0	9.1	9.2	9.3	9.3	9.3	8.9	9.0	9.0	9.1	5.9
PC	15% Non-Irradiated Papaya	13	11.1	11.3	11.6	11.7	12.0	12.3	12.1	11.3	11.5	11.6	11.8	7.9
		14	10.9	11.3	11.0	11.4	11.5	11.8	11.5	11.0	11.1	11.1	11.2	8.3
		15	7.8	7.8	7.9	7.9	8.0	8.2	8.0	7.8	7.9	7.7	7.5	5.0
		16	10.0	10.1	10.2	10.4	10.5	10.6	10.7	10.4	10.3	10.3	10.3	7.0
		Mean	10.0	10.1	10.2	10.4	10.5	10.7	10.6	10.1	10.2	10.2	10.2	7.0
I	15% Papaya Irradiated at 75,000 rads	21	13.5	10.0	10.1	10.2	10.2	10.2	10.3	10.2	10.2	10.3	10.5	8.1
		22	14.0	14.1	14.2	14.5	14.6	14.8	14.9	14.3	14.5	14.5	14.7	10.4
		23	8.1	8.1	8.2	8.7	8.8	8.9	8.9	8.8	9.0	8.8	8.9	5.8
		24	9.1	9.1	9.3	9.8	9.7	10.1	9.9	9.7	10.0	10.0	10.1	7.0
		Mean	11.2	10.3	10.4	10.8	10.5	11.0	11.0	10.8	10.9	10.9	11.0	7.8
II	15% Papaya Irradiated at 200,000 rads	29	9.0	9.0	9.3	9.6	9.7	9.8	9.9	9.7	9.8	9.8	9.9	6.8
		30	10.1	10.1	10.2	10.9	11.0	11.1	10.9	10.8	10.1	10.6	10.6	7.1
		31	8.6	8.6	8.7	8.9	9.0	8.9	8.7	8.6	8.5	8.6	8.5	5.5
		32	8.5	8.6	8.7	9.1	9.3	9.6	9.6	9.3	9.4	9.5	9.4	6.1
		Mean	9.0	9.1	9.2	9.6	9.7	9.8	9.8	9.6	9.6	9.6	9.6	6.4

B. Food Consumption and Food Efficiency

Food consumption and food efficiency data are presented in Tables IV through VI.

Food efficiency as grams of weight gained per 100 grams of food consumed was calculated through the first 13 weeks of testing. At this point growth rates plateaued and food efficiency became erratic and meaningless.

Statistical analyses revealed no significant differences between the positive control, negative control and the two test groups with respect to food consumption or food efficiency.

TABLE IV
TEST MATERIAL: Low-Dose Irradiated Papayas
Mean Body Weight and Food Consumption Data

Negative Control Group - Males

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.5	
1	3.9	54
2	4.2	56
3	4.8	65
4	5.1	56
5	5.5	50
6	5.5	48
7	5.9	51
8	5.9	37
9	6.2	42
10	6.3	46
11	6.3	46
12	6.5	47
13	7.1	53
20	8.2	57
28	8.7	31
36	9.3	30
44	9.0	23
52	9.5	15
60	9.8	17
68	10.0	15
76	10.0	21
84	9.6	23
92	10.0	32
100	9.5	18
Mean		39

TABLE IV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Positive Control Group - Males

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.6	
1	4.0	60
2	4.2	62
3	5.0	70
4	5.2	62
5	5.5	65
6	5.7	54
7	6.1	54
8	6.1	47
9	6.4	54
10	6.6	52
11	6.6	49
12	6.7	50
13	7.1	52
20	8.0	50
28	8.5	38
36	9.6	33
44	9.8	24
52	10.3	19
60	10.6	20
68	10.6	21
76	10.5	29
84	10.7	24
92	11.0	36
100	10.6	36
Mean		44

TABLE IV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Test Group I (75,000 Rads) - Males

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.2	
1	3.6	62
2	3.8	58
3	4.5	75
4	4.8	65
5	5.0	63
6	5.1	50
7	5.5	59
8	5.7	58
9	6.2	58
10	6.4	64
11	6.6	61
12	6.6	55
13	7.0	58
20	8.3	40
28	8.6	42
36	9.4	41
44	9.5	27
52	10.1	19
60	10.0	23
68	10.0	27
76	9.9	43
84	9.9	34
92	10.1	40
100	10.0	27
Mean		48

TABLE IV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Test Group II (200,000 Rads) - Males

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.6	
1	3.9	63
2	4.4	72
3	5.1	76
4	5.3	63
5	5.7	65
6	5.8	59
7	6.3	61
8	6.6	53
9	6.8	55
10	7.3	64
11	7.2	63
12	7.4	56
13	8.0	62
20	9.6	40
28	10.3	39
36	10.8	37
44	10.7	26
52	10.7	21
60	11.5	24
68	11.8	20
76	11.8	40
84	11.8	18
92	12.2	32
100	11.7	25
Mean		47

TABLE V

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Negative Control Group - Females

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.2	
1	3.6	63
2	3.9	64
3	4.4	55
4	4.8	55
5	5.1	52
6	5.3	50
7	5.3	40
8	5.6	53
9	5.9	61
10	5.9	61
11	5.9	52
12	6.1	55
13	6.5	52
20	7.4	35
28	7.8	33
36	7.9	32
44	8.1	24
52	8.3	37
60	8.7	18
68	9.0	17
76	9.2	24
84	9.5	15
92	9.4	34
100	8.9	21
Mean		42

TABLE V continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Positive Control Group - Females

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.2	
1	3.4	63
2	3.7	70
3	4.2	70
4	4.5	63
5	4.8	60
6	4.9	58
7	5.3	58
8	5.4	52
9	5.7	60
10	5.8	65
11	6.0	60
12	6.2	55
13	6.6	59
20	8.0	47
28	8.3	45
36	9.0	44
44	8.8	24
52	8.4	64
60	9.4	28
68	10.0	28
76	9.8	38
84	10.2	23
92	10.4	38
100	10.6	23
Mean		50

TABLE V continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Test Group I (75,000 Rads) - Females

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.2	
1	3.6	65
2	3.8	62
3	4.3	70
4	5.0	58
5	5.3	63
6	5.3	58
7	5.7	59
8	6.1	61
9	6.5	58
10	6.5	62
11	6.7	65
12	6.9	52
13	7.4	57
20	8.2	56
28	8.8	48
36	9.8	44
44	9.5	34
52	10.6	21
60	10.8	38
68	10.4	26
76	10.2	41
84	11.4	24
92	11.0	41
100	10.8	27
Mean		50

TABLE V continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Body Weight and Food Consumption Data

Test Group II (200,000 Rads) - Females

Week	Body Weights (kg)	Food Consumption (g/kg/day)
0	3.2	
1	3.6	63
2	3.9	65
3	4.6	76
4	4.9	65
5	5.1	60
6	5.2	59
7	5.5	57
8	5.7	50
9	5.9	55
10	6.2	63
11	6.3	55
12	6.5	50
13	6.9	53
20	7.6	49
28	7.9	44
36	8.5	43
44	8.4	25
52	8.8	20
60	8.9	27
68	9.4	28
76	9.0	39
84	8.8	35
92	9.6	39
100	9.6	23
Mean		48

TABLE VI

TEST MATERIAL: Low-Dose Irradiated Papayas

Food Efficiency Data

Week	Group	Grams of Weight Gained/100 Grams of Food Consumed During Week Indicated							
		Males				Females			
		NC	PC	T-I	T-II	NC	PC	T-I	T-II
1		27.1	23.8	25.6	17.6	25.2	13.3	24.2	25.2
2		18.2	11.0	13.0	22.5	17.2	16.5	12.2	16.9
3		27.5	32.6	29.6	25.8	21.1	24.3	23.7	28.6
4		15.0	8.9	13.7	8.6	5.9	15.0	34.5	13.4
5		20.8	12.0	9.1	15.4	21.6	14.9	12.8	9.3
6		-	9.3	5.6	4.2	16.2	5.0	-	4.6
7		19.0	17.3	17.6	18.6	10.8	18.6	17.0	13.7
8		-	-	8.6	12.2	-	5.1	15.4	10.0
9		16.4	12.4	19.9	7.6	14.4	12.5	15.2	8.8
10		4.9	8.3	7.0	15.3	11.9	3.8	-	11.0
11		-	-	7.1	-	-	7.9	6.6	4.1
12		9.4	4.3	-	6.9	8.5	8.4	8.0	8.8
13		22.8	15.5	14.1	17.3	16.9	14.7	16.9	15.6
Mean		13.9	12.0	13.1	13.2	13.0	12.3	14.3	13.1

C. Reactions

No untoward behavioral reactions were recorded during the investigation.

D. Mortality

No fatalities occurred during the investigation.

E. Hematologic and Blood Chemistry Studies

The results of the hematologic and blood chemistry studies are presented in Tables VII through XIV.

No outstanding differences between test and positive and negative control dogs were noted with respect to any of the parameters investigated.

TABLE VII

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Total Leukocyte Count,
thousands/mm³

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	15.6	15.2	11.6	12.1	12.8	15.6
		2-M	17.1	11.9	12.4	13.2	14.4	10.9
		3-M	19.1	14.2	12.0	10.3	17.0	15.8
		4-M	14.6	12.5	11.3	12.0	16.5	16.3
		5-F	15.5	13.5	14.9	N/A	16.7	14.0
		6-F	27.3	16.5	16.6	N/A	13.1	12.0
		7-F	14.3	11.7	14.4	13.0	13.3	12.6
		8-F	18.1	10.0	14.3	10.7	13.1	13.6
PC	15% Non-Irradiated Papaya	9-M	13.6	10.8	15.6	12.4	12.9	11.2
		10-M	18.0	11.3	11.0	11.5	13.4	9.2
		11-M	17.4	11.7	16.9	10.1	9.0	12.9
		12-M	13.3	9.6	8.0	16.1	10.6	12.9
		13-F	13.2	12.9	16.4	10.4	9.3	16.0
		14-F	10.8	13.8	11.2	N/A	11.4	9.3
		15-F	14.3	11.2	11.8	N/A	10.4	18.3
		16-F	15.1	26.6	11.8	15.0	13.3	16.6
I	15% Papaya Irradiated at 75,000 rads	17-M	13.9	15.3	10.5	14.1	12.7	11.5
		18-M	10.3	11.1	13.8	11.2	12.0	11.8
		19-M	10.3	12.0	15.2	12.3	10.4	10.6
		20-M	11.8	11.1	11.8	10.0	14.4	10.6
		21-F	18.0	17.3	12.4	18.5	15.1	20.5
		22-F	9.8	8.3	10.2	7.6	10.1	11.4
		23-F	12.6	15.5	9.9	10.6	12.4	12.4
		24-F	10.6	11.8	15.4	15.9	13.6	20.5
II	15% Papaya Irradiated at 200,000 rads	25-M	10.5	10.8	9.9	11.6	12.0	12.6
		26-M	34.6	14.0	10.1	13.6	14.3	16.1
		27-M	11.1	10.1	12.6	16.5	13.2	15.5
		28-M	37.4	12.1	15.5	15.9	14.1	15.8
		29-F	20.4	13.9	11.9	15.4	15.1	17.7
		30-F	16.7	8.7	14.2	12.0	10.6	9.9
		31-F	22.5	15.1	13.3	13.2	17.0	19.5
		32-F	19.8	12.7	14.0	10.7	15.6	10.8

N/A: data not available

TABLE VIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Erythrocyte Count,
millions/mm³

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	4.50	6.16	5.94	5.72	6.65	6.40
		2-M	4.44	5.48	6.50	6.07	6.41	6.00
		3-M	4.93	6.20	6.51	6.13	6.39	7.03
		4-M	5.63	7.08	6.14	6.86	7.05	6.06
		5-F	4.96	5.78	6.14	N/A	6.74	6.58
		6-F	5.38	5.43	5.88	N/A	6.51	6.35
		7-F	5.88	6.72	5.80	7.00	7.15	7.09
		8-F	5.70	5.32	6.28	6.43	5.55	6.32
PC	15% Non-Irradiated Papaya	9-M	4.62	5.45	5.46	5.65	5.50	5.72
		10-M	4.90	5.36	5.48	6.69	6.43	6.73
		11-M	4.96	5.21	6.04	6.17	6.46	6.45
		12-M	5.06	6.08	6.76	7.01	6.66	6.76
		13-F	4.96	5.78	5.89	6.47	5.84	6.26
		14-F	5.10	5.36	6.49	N/A	6.13	5.44
		15-F	4.92	5.61	5.76	N/A	6.47	6.70
		16-F	5.27	5.55	5.89	6.25	5.07	5.03
I	15% Papaya Irradiated at 75,000 rads	17-M	5.06	6.09	5.84	6.09	5.70	5.99
		18-M	4.44	5.18	5.69	6.15	6.11	5.97
		19-M	4.99	5.68	5.96	5.92	6.28	6.48
		20-M	4.23	5.21	5.51	5.64	6.15	6.29
		21-F	4.59	5.35	6.01	6.96	6.44	6.42
		22-F	4.67	5.31	5.38	6.36	5.68	6.73
		23-F	5.24	5.39	6.03	5.98	6.36	5.61
		24-F	4.77	5.74	6.26	5.77	6.52	6.20
II	15% Papaya Irradiated at 200,000 rads	25-M	5.31	5.23	5.45	6.33	6.99	6.95
		26-M	4.44	4.88	6.43	6.44	6.72	6.43
		27-M	4.45	4.85	6.15	5.71	6.42	6.18
		28-M	5.45	5.41	6.00	6.65	6.77	6.46
		29-F	4.75	5.50	6.16	6.33	6.33	6.50
		30-F	5.12	5.10	6.01	6.46	5.75	5.47
		31-F	5.28	6.24	6.16	6.72	6.10	6.00
		32-F	5.29	5.84	5.96	6.78	5.50	6.52

N/A: data not available

TABLE IX

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Hemoglobin,
gm/100 ml

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	10.6	14.6	14.3	13.9	15.8	14.7
		2-M	11.0	13.9	15.7	14.2	14.5	14.3
		3-M	12.1	16.2	16.2	15.3	15.8	16.6
		4-M	12.6	15.1	16.0	16.3	16.4	13.9
		5-F	11.8	14.8	15.6	N/A	16.5	15.9
		6-F	12.2	13.4	14.9	N/A	16.0	15.5
		7-F	13.5	16.0	14.4	15.9	15.7	16.0
		8-F	12.8	14.2	14.3	16.3	12.9	14.7
PC	15% Non-Irradiated Papaya	9-M	11.0	13.0	13.4	13.5	12.8	13.6
		10-M	11.8	12.8	13.4	15.4	15.1	15.2
		11-M	12.0	13.4	14.6	14.0	15.0	15.3
		12-M	11.9	15.8	15.9	17.1	15.6	15.9
		13-F	11.0	14.1	14.3	14.7	13.3	14.5
		14-F	11.8	13.1	15.5	N/A	14.8	13.5
		15-F	11.4	14.2	14.0	N/A	15.1	15.5
		16-F	10.7	12.6	15.3	14.6	12.3	14.1
I	15% Papaya Irradiated at 75,000 rads	17-M	12.8	14.6	14.3	14.2	13.9	14.4
		18-M	10.8	12.4	13.9	14.7	14.8	14.5
		19-M	12.0	14.2	14.8	13.8	15.2	15.5
		20-M	10.0	12.4	13.0	12.9	14.6	14.7
		21-F	11.4	13.9	14.5	16.3	15.3	15.6
		22-F	11.0	13.2	13.8	15.5	13.9	16.2
		23-F	12.0	13.1	15.5	13.7	15.2	13.7
		24-F	11.4	14.6	15.3	13.5	15.3	14.9
II	15% Papaya Irradiated at 200,000 rads	25-M	12.8	14.0	13.0	14.9	16.7	16.5
		26-M	11.3	13.9	15.8	15.3	16.3	15.3
		27-M	10.0	12.7	14.7	13.3	14.6	14.2
		28-M	12.0	13.6	14.7	15.3	15.6	14.9
		29-F	12.0	14.2	15.6	14.7	15.1	15.3
		30-F	13.4	13.3	14.6	15.4	13.3	13.6
		31-F	12.3	14.6	14.8	15.8	14.9	16.5
		32-F	13.1	14.5	14.8	15.7	13.4	15.9

N/A: data not available

TABLE X

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Hematocrit,
percent

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	32	41	43	39	46	44
		2-M	32	39	45	42	43	43
		3-M	34	45	46	44	45	48
		4-M	36	45	44	46	47	41
		5-F	34	41	46	N/A	47	46
		6-F	39	45	43	N/A	45	44
		7-F	39	46	42	46	45	45
		8-F	38	40	41	44	38	43
PC	15% Non-Irradiated Papaya	9-M	33	36	39	39	37	40
		10-M	36	36	38	46	43	44
		11-M	36	38	42	41	42	44
		12-M	34	44	45	49	45	46
		13-F	33	39	42	42	38	41
		14-F	34	38	44	N/A	42	37
		15-F	34	41	41	N/A	43	45
		16-F	33	36	44	43	34	39
I	15% Papaya Irradiated at 75,000 rads	17-M	36	42	42	42	39	42
		18-M	32	36	41	43	43	42
		19-M	34	40	43	41	43	44
		20-M	30	33	38	37	41	42
		21-F	35	40	42	48	44	44
		22-F	32	37	38	44	39	46
		23-F	35	36	44	40	42	38
		24-F	32	41	44	39	44	43
II	15% Papaya Irradiated at 200,000 rads	25-M	37	40	38	43	48	48
		26-M	39	37	45	44	46	44
		27-M	31	36	43	39	43	42
		28-M	35	38	42	44	45	43
		29-F	35	41	46	43	42	45
		30-F	38	36	42	44	37	38
		31-F	36	43	42	47	42	48
		32-F	38	40	42	47	39	45

N/A: data not available

TABLE XI

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Differential Leukocyte Count,
percent - Neutrophils

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	73	54	61	69	67	68
		2-M	74	51	63	67	67	47
		3-M	46	47	58	63	68	53
		4-M	69	47	65	42	65	63
		5-F	71	46	65	N/A	55	60
		6-F	53	51	57	N/A	62	54
		7-F	57	61	67	71	62	66
		8-F	66	49	66	58	62	61
PC	15% Non-Irradiated Papaya	9-M	79	64	77	72	63	60
		10-M	72	50	69	70	61	69
		11-M	70	45	65	75	62	62
		12-M	47	43	72	70	48	65
		13-F	65	54	55	78	75	66
		14-F	70	59	68	N/A	61	61
		15-F	77	66	53	N/A	52	75
		16-F	69	75	58	68	60	65
I	15% Papaya Irradiated at 75,000 rads	17-M	53	39	55	81	77	51
		18-M	61	51	57	77	50	58
		19-M	62	53	69	57	66	70
		20-M	55	44	63	76	60	51
		21-F	74	46	51	68	65	71
		22-F	52	47	69	73	46	60
		23-F	61	73	58	78	65	58
		24-F	74	68	56	66	55	67
II	15% Papaya Irradiated at 200,000 rads	25-M	48	49	45	71	59	56
		26-M	83	64	66	82	56	59
		27-M	54	42	52	72	56	61
		28-M	72	42	68	71	60	60
		29-F	63	72	52	76	54	71
		30-F	63	51	71	64	61	42
		31-F	60	66	54	69	53	68
		32-F	65	68	56	75	78	64

N/A: data not available

TABLE XI continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Differential Leukocyte Count,
percent - Lymphocytes

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	27	41	35	25	26	31
		2-M	25	35	34	29	22	41
		3-M	51	38	38	31	30	43
		4-M	28	51	28	56	23	28
		5-F	25	51	32	N/A	39	37
		6-F	40	42	43	N/A	33	37
		7-F	41	36	28	27	26	29
		8-F	28	36	28	38	31	30
PC	15% Non-Irradiated Papaya	9-M	17	29	19	27	33	37
		10-M	27	45	30	29	38	24
		11-M	24	49	31	23	30	34
		12-M	51	44	27	27	40	28
		13-F	30	35	37	20	18	25
		14-F	29	37	30	N/A	30	37
		15-F	22	23	40	N/A	40	23
		16-F	30	16	40	29	34	30
I	15% Papaya Irradiated at 75,000 rads	17-M	44	43	41	15	16	33
		18-M	36	36	39	16	44	41
		19-M	36	42	26	37	25	22
		20-M	40	44	25	19	35	47
		21-F	25	36	38	30	30	23
		22-F	46	52	30	23	46	33
		23-F	36	15	37	18	24	34
		24-F	26	30	40	29	39	33
II	15% Papaya Irradiated at 200,000 rads	25-M	51	45	44	22	38	37
		26-M	13	27	34	18	33	35
		27-M	44	50	43	16	37	34
		28-M	19	44	30	20	29	35
		29-F	32	20	38	21	40	23
		30-F	35	45	24	30	33	55
		31-F	34	27	44	30	35	31
		32-F	27	24	36	19	17	30

N/A: data not available

TABLE XI continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Differential Leukocyte Count,
percent - Monocytes

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	0	1	0	1	0	0
		2-M	0	4	3	0	1	0
		3-M	2	7	1	3	1	0
		4-M	1	0	3	0	3	0
		5-F	0	0	1	N/A	0	0
		6-F	3	6	0	N/A	0	0
		7-F	1	2	0	0	0	1
		8-F	4	4	0	0	0	0
PC	15% Non-Irradiated Papaya	9-M	4	4	1	0	0	0
		10-M	1	1	0	0	0	0
		11-M	1	0	0	0	0	0
		12-M	1	4	0	0	0	0
		13-F	0	1	0	0	0	0
		14-F	1	1	0	N/A	2	1
		15-F	1	5	0	N/A	1	0
		16-F	1	2	1	0	0	0
I	15% Papaya Irradiated at 75,000 rads	17-M	1	2	0	3	0	1
		18-M	2	5	0	5	0	0
		19-M	1	0	0	1	0	0
		20-M	1	2	0	3	0	0
		21-F	1	0	0	1	0	0
		22-F	1	0	0	3	0	0
		23-F	1	2	0	4	0	0
		24-F	0	1	1	1	0	0
II	15% Papaya Irradiated at 200,000 rads	25-M	0	0	0	1	0	0
		26-M	0	2	0	0	0	0
		27-M	0	0	0	2	0	0
		28-M	1	5	1	3	1	0
		29-F	1	1	1	1	2	0
		30-F	0	1	2	2	0	1
		31-F	6	6	0	0	3	0
		32-F	4	3	0	2	1	0

N/A: data not available

TABLE XI continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Differential Leukocyte Count,
percent - Eosinophils

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	0	3	4	5	7	1
		2-M	1	9	0	4	10	2
		3-M	1	8	3	3	1	4
		4-M	2	2	1	2	8	9
		5-F	4	3	2	2	6	3
		6-F	4	1	0	N/A	5	9
		7-F	1	1	5	N/A	12	4
		8-F	2	11	6	4	7	7
PC	15% Non-Irradiated Papaya	9-M	0	3	3	1	4	3
		10-M	0	4	1	1	1	7
		11-M	5	6	4	2	8	4
		12-M	1	9	1	3	12	7
		13-F	5	10	8	2	7	9
		14-F	0	3	2	N/A	7	1
		15-F	0	6	7	N/A	7	2
		16-F	0	7	1	3	6	5
I	15% Papaya Irradiated at 75,000 rads	17-M	2	16	4	1	7	15
		18-M	1	8	4	2	6	1
		19-M	1	5	5	4	8	8
		20-M	4	10	2	2	5	2
		21-F	0	18	11	1	5	6
		22-F	1	1	1	1	8	6
		23-F	2	10	5	0	10	7
		24-F	0	1	3	1	6	0
II	15% Papaya Irradiated at 200,000 rads	25-M	1	6	11	6	3	7
		26-M	4	7	8	0	11	5
		27-M	2	8	5	9	7	5
		28-M	8	7	1	6	10	5
		29-F	4	7	9	2	4	6
		30-F	2	3	3	4	6	2
		31-F	0	1	2	1	8	1
		32-F	4	5	8	4	4	6

N/A: data not available

TABLE XI continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Hematologic Studies: Differential Leukocyte Count,
percent - Basophils

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	0	1	0	0	0	0
		2-M	0	1	0	0	0	0
		3-M	0	0	0	0	0	0
		4-M	0	0	0	0	1	0
		5-F	0	0	0	0	0	0
		6-F	0	0	0	N/A	0	0
		7-F	0	0	0	N/A	0	0
		8-F	0	0	0	0	0	2
PC	15% Non-Irradiated Papaya	9-M	0	0	0	0	0	0
		10-M	0	0	0	0	0	0
		11-M	0	0	0	0	0	0
		12-M	0	0	0	0	0	0
		13-F	0	0	0	0	0	0
		14-F	0	0	0	N/A	0	0
		15-F	0	0	0	N/A	0	0
		16-F	0	0	0	0	0	0
I	15% Papaya Irradiated at 75,000 rads	17-M	0	0	0	0	0	0
		18-M	0	0	0	0	0	0
		19-M	0	0	0	1	1	0
		20-M	0	0	0	0	0	0
		21-F	0	0	0	0	0	0
		22-F	0	0	0	0	0	1
		23-F	0	0	0	0	1	1
		24-F	0	0	0	3	0	0
II	15% Papaya Irradiated at 200,000 rads	25-M	0	0	0	0	0	0
		26-M	0	0	0	0	0	1
		27-M	0	0	0	0	0	0
		28-M	0	0	0	0	0	0
		29-F	0	0	0	0	0	0
		30-F	0	0	0	0	0	0
		31-F	0	0	0	0	1	0
		32-F	0	0	0	0	0	0

N/A: data not available

TABLE XII

TEST MATERIAL: Low-Dose Irradiated Papayas

Blood Chemistry Studies: Serum Glutamic-Oxalacetic Transaminase,
Dade Units/ml

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	20	35	28	35	20	23
		2-M	26	38	28	33	22	20
		3-M	22	38	30	48	20	22
		4-M	24	39	30	34	14	27
		5-F	24	32	28	N/A	17	18
		6-F	28	43	34	N/A	26	21
		7-F	28	52	37	43	22	18
		8-F	30	57	41	33	26	25
PC	15% Non-Irradiated Papaya	9-M	24	32	30	33	30	17
		10-M	32	41	24	46	17	17
		11-M	34	44	34	41	23	22
		12-M	24	35	33	38	6	30
		13-F	30	42	32	27	22	19
		14-F	20	41	31	N/A	15	15
		15-F	30	32	44	N/A	12	14
		16-F	28	33	32	36	27	15
I	15% Papaya Irradiated at 75,000 rads	17-M	24	40	31	34	33	22
		18-M	20	40	39	39	29	21
		19-M	30	37	38	66	18	22
		20-M	22	30	28	28	21	14
		21-F	42	22	40	47	21	13
		22-F	18	34	24	31	45	15
		23-F	32	35	30	43	31	19
		24-F	30	47	29	33	28	19
II	15% Papaya Irradiated at 200,000 rads	25-M	18	35	36	29	22	20
		26-M	20	35	25	32	35	19
		27-M	24	38	35	43	28	26
		28-M	22	44	28	36	17	19
		29-F	28	32	30	36	29	29
		30-F	24	35	63	34	37	19
		31-F	32	32	37	34	28	21
		32-F	34	40	38	39	28	17

note: fluorometric method by Levine and Hill.
N/A: data not available

TABLE XIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Blood Chemistry Studies: Serum Alkaline Phosphatase,
King-Armstrong Units/100 ml

Group	Dietary Level (%)	Dog Number and Sex	Months:					
			0	3	6	12	18	24
NC	None	1-M	8.6	7.5	5.4	3.3	3.2	4.2
		2-M	13.0	9.8	8.2	3.1	3.2	3.7
		3-M	18.5	12.2	6.2	4.6	5.8	5.4
		4-M	15.0	10.0	8.2	4.8	5.0	3.5
		5-F	15.1	8.4	5.8	N/A	3.4	3.5
		6-F	10.1	7.3	4.2	N/A	2.8	2.9
		7-F	16.6	10.3	11.0	5.0	4.6	4.6
		8-F	14.5	9.8	7.8	6.1	12.5	11.0
PC	15% Non-Irradiated Papaya	9-M	14.0	9.1	6.0	4.1	5.2	3.7
		10-M	10.1	6.8	3.7	3.5	4.2	5.4
		11-M	14.0	9.5	4.6	5.2	4.8	4.8
		12-M	14.0	8.4	7.2	4.3	3.8	4.0
		13-F	13.3	8.4	8.6	3.3	6.6	4.4
		14-F	11.6	9.3	6.0	N/A	3.8	6.8
		15-F	11.6	8.2	6.8	N/A	4.8	8.8
		16-F	15.5	11.2	5.7	8.6	8.4	7.4
I	15% Papaya Irradiated at 75,000 rads	17-M	16.0	11.5	6.0	4.8	3.6	3.3
		18-M	12.5	9.1	8.4	5.0	5.2	4.6
		19-M	13.0	9.5	8.6	9.3	6.2	7.0
		20-M	9.9	8.6	4.5	3.9	4.4	3.7
		21-F	12.6	7.5	6.2	5.0	4.6	4.4
		22-F	15.0	8.4	4.0	4.8	4.6	4.0
		23-F	12.1	8.9	6.5	5.2	7.1	6.1
		24-F	14.5	9.5	4.6	5.8	3.6	3.5
II	15% Papaya Irradiated at 200,000 rads	25-M	12.6	9.3	5.9	5.6	7.3	6.5
		26-M	15.5	11.5	6.7	3.7	3.4	3.3
		27-M	12.5	10.5	8.7	5.4	7.5	5.4
		28-M	16.0	9.1	6.2	8.1	6.4	6.5
		29-F	13.8	12.2	5.1	4.6	5.2	4.6
		30-F	14.3	7.1	7.5	5.8	6.0	5.6
		31-F	17.7	7.5	6.8	6.7	5.8	6.1
		32-F	11.6	12.2	4.3	3.7	9.1	4.2

note: colorimetric method by Babson.

N/A: data not available

TABLE XIV

TEST MATERIAL: Low-Dose Irradiated Papayas

Blood Chemistry Studies: Liver Function Test,
percent retention after 15 minutes

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	4.8	2.0	3.0	3.4	3.4
		2-M	2.9	3.0	2.6	2.4	2.4
		3-M	3.2	2.1	3.6	3.7	3.5
		4-M	3.8	1.3	3.8	3.1	3.0
		5-F	4.0	2.1	N/A	3.2	2.6
		6-F	5.0	2.8	N/A	3.9	4.4
		7-F	2.6	2.7	3.8	2.7	2.9
		8-F	3.8	1.6	4.7	3.3	3.7
PC	15% Non-Irradiated Papaya	9-M	2.6	2.5	2.8	3.0	2.9
		10-M	2.6	4.0	2.3	2.7	3.0
		11-M	3.2	2.9	1.8	3.7	3.5
		12-M	4.0	2.6	4.2	3.9	3.8
		13-F	4.0	2.6	5.0	3.0	3.5
		14-F	3.2	3.0	N/A	3.1	N/A
		15-F	3.3	2.7	N/A	3.1	2.6
		16-F	4.0	2.6	3.8	3.6	5.2
I	15% Papaya Irradiated at 75,000 rads	17-M	3.5	2.1	4.3	2.3	3.0
		18-M	2.9	3.7	2.8	2.0	3.5
		19-M	3.0	2.5	1.7	2.7	2.9
		20-M	2.9	3.0	3.7	1.6	3.8
		21-F	3.1	2.1	4.3	3.0	3.3
		22-F	3.3	2.1	3.0	3.4	2.4
		23-F	3.0	2.5	3.4	1.6	3.1
		24-F	3.5	2.6	3.6	2.8	3.0
II	15% Papaya Irradiated at 200,000 rads	25-M	3.7	2.3	3.0	3.4	3.5
		26-M	2.5	2.7	4.9	3.2	3.5
		27-M	2.8	2.0	3.6	2.9	3.5
		28-M	4.7	3.6	4.5	2.6	3.8
		29-F	3.7	3.0	3.5	4.1	3.5
		30-F	4.0	2.5	3.3	3.1	4.4
		31-F	5.6	3.0	3.8	2.7	3.5
		32-F	3.7	2.7	3.5	3.3	5.2

note: bromosulfophthalein method.

N/A: data not available

F. Urological Studies

The results of the urological studies are presented in Tables XV through XX.

No significant differences between the urine of test and positive and negative control dogs were observed.

TABLE XV

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Albumin,
mg/100 ml

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	0	0	0	0	11-50
		2-M	0	0	0	0	51-200
		3-M	0	0	0	0	11-50
		4-M	0	0	0	0	11-50
		5-F	0	0	0	0	10
		6-F	0	0	0	0	11-50
		7-F	0	0	0	0	11-50
		8-F	0	0	0	0	10
PC	15% Non-Irradiated Papaya	9-M	0	0	0	0	11-50
		10-M	0	0	0	0	11-50
		11-M	0	0	0	0	10
		12-M	0	10	0	0	11-50
		13-F	0	0	0	0	11-50
		14-F	0	0	0	0	11-50
		15-F	0	0	0	0	11-50
		16-F	0	0	0	0	10
I	15% Papaya Irradiated at 75,000 rads	17-M	0	0	0	0	10
		18-M	0	0	0	0	10
		19-M	0	0	0	0	10
		20-M	0	0	0	0	10
		21-F	0	0	0	0	0
		22-F	0	0	0	0	0
		23-F	0	0	0	0	51-200
		24-F	0	0	0	0	201-500
II	15% Papaya Irradiated at 200,000 rads	25-M	0	10	0	0	51-200
		26-M	0	0	0	0	51-200
		27-M	0	0	0	0	11-50
		28-M	0	0	0	0	11-50
		29-F	0	0	0	0	51-200
		30-F	0	10	0	0	51-200
		31-F	0	10	0	0	10
		32-F	0	0	0	0	51-200

note: BUMINTEST, Ames Company, Inc., Elkhart, Indiana.

TABLE XVI

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Glucose,
mg/100 ml

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	0	0	0	0	0
		2-M	0	0	0	0	0
		3-M	0	0	0	0	0
		4-M	0	0	0	0	0
		5-F	0	0	0	0	0
		6-F	0	0	0	0	0
		7-F	0	0	0	0	0
		8-F	0	0	0	0	0
PC	15% Non-Irradiated Papaya	9-M	0	0	0	0	0
		10-M	0	0	0	0	0
		11-M	0	0	0	0	0
		12-M	0	0	0	0	0
		13-F	0	0	0	0	0
		14-F	0	0	0	0	0
		15-F	0	0	0	0	0
		16-F	0	0	0	0	0
I	15% Papaya Irradiated at 75,000 rads	17-M	0	0	0	0	0
		18-M	0	0	0	0	0
		19-M	0	0	0	0	0
		20-M	0	0	0	0	0
		21-F	0	0	0	0	0
		22-F	0	0	0	0	0
		23-F	0	0	0	0	0
		24-F	0	0	0	0	0
II	15% Papaya Irradiated at 200,000 rads	25-M	0	0	0	0	0
		26-M	0	0	0	0	0
		27-M	0	0	0	0	0
		28-M	0	0	0	0	0
		29-F	0	0	0	0	0
		30-F	0	0	0	0	0
		31-F	0	0	0	0	0
		32-F	0	0	0	0	0

note: COMBISTIX, Ames Company, Inc., Elkhart, Indiana.

TABLE XVII

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: pH

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	5	5	7	6	8
		2-M	5	5	8	8	9
		3-M	5	5	9	8	9
		4-M	7	7	8	7	8
		5-F	8	5	7	7	8
		6-F	9	6	6	6	9
		7-F	6	7	7	6	9
		8-F	7	5	7	6	7
PC	15% Non-Irradiated Papaya	9-M	8	5	6	6	8
		10-M	9	6	6	7	8
		11-M	7	6	7	6	8
		12-M	8	6	7	7	8
		13-F	8	5	6	6	8
		14-F	5	6	6	6	8
		15-F	5	7	6	6	8
		16-F	5	5	8	8	7
I	15% Papaya Irradiated at 75,000 rads	17-M	5	8	6	7	7
		18-M	5	6	8	8	8
		19-M	5	8	9	7	8
		20-M	5	5	8	6	6
		21-F	8	8	8	5	9
		22-F	9	7	8	6	6
		23-F	5	9	8	8	7
		24-F	7	6	8	7	6
II	15% Papaya Irradiated at 200,000 rads	25-M	5	9	7	8	8
		26-M	5	7	8	9	8
		27-M	5	8	6	6	8
		28-M	5	8	6	6	8
		29-F	5	6	6	7	8
		30-F	8	7	6	7	8
		31-F	8	7	6	6	7
		32-F	5	7	8	7	8

note: COMBISTIX, Ames Company, Inc., Elkhart, Indiana.

TABLE XVIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Microscopic Elements,
average per high power field - Leukocytes

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	0	0	0	0	0
		2-M	0	0	0	0	0
		3-M	0	0	0	0	0
		4-M	0	0	0	0	0
		5-F	0	0	0	0	0
		6-F	0	12	0	0	0
		7-F	0	0	0	0	0
		8-F	0	0	0	0	0
PC	15% Non-Irradiated Papaya	9-M	0	0	0	0	0
		10-M	0	0	0	0	0
		11-M	0	0	0	0	0
		12-M	0	10	0	0	0
		13-F	0	0	0	0	15-20
		14-F	0	12	0	0	3-5
		15-F	0	0	0	0	6-10
		16-F	0	0	0	0	0
I	15% Papaya Irradiated at 75,000 rads	17-M	0	0	0	0	0
		18-M	0	0	0	0	0
		19-M	0	0	0	0	0
		20-M	0	0	0	0	0
		21-F	0	*	0	0	12-15
		22-F	0	5	0	0	3-5
		23-F	0	0	0	0	0
		24-F	0	0	0	0	5-8
II	15% Papaya Irradiated at 200,000 rads	25-M	0	0	0	0	0
		26-M	0	0	0	0	0
		27-M	0	0	0	0	0
		28-M	0	0	0	0	0
		29-F	0	0	0	0	0
		30-F	0	5	0	0	3-5
		31-F	0	0	0	0	0
		32-F	0	0	0	0	0

* mass of white blood and epithelial cells observed.

TABLE XVIII continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Microscopic Elements,
average per high power field - Erythrocytes

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	0	0	0	0	5-8
		2-M	0	0	0	0	0
		3-M	0	0	0	0	0
		4-M	0	0	0	0	3-5
		5-F	0	0	0	0	8-12
		6-F	0	8	0	0	3-5
		7-F	0	0	0	0	0
		8-F	0	0	0	0	0
PC	15% Non-Irradiated Papaya	9-M	0	0	0	0	3-5
		10-M	0	0	0	0	0
		11-M	0	0	0	0	0
		12-M	0	0	0	0	0
		13-F	0	0	0	0	0
		14-F	0	0	0	0	0
		15-F	0	0	0	0	0
		16-F	0	0	0	0	6-10
I	15% Papaya Irradiated at 75,000 rads	17-M	0	0	0	0	0
		18-M	0	0	0	0	0
		19-M	0	0	0	0	0
		20-M	0	0	0	0	0
		21-F	0	0	0	0	3-5
		22-F	0	0	0	0	15-20
		23-F	0	0	0	0	3-5
		24-F	0	0	0	0	20-25
II	15% Papaya Irradiated at 200,000 rads	25-M	0	0	0	0	0
		26-M	0	0	0	0	0
		27-M	0	0	0	0	0
		28-M	0	0	0	0	0
		29-F	0	0	0	0	0
		30-F	0	0	0	0	5-8
		31-F	0	0	0	0	0
		32-F	0	0	0	0	0

TABLE XVIII continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Microscopic Elements,
average per high power field - Crystals

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	0-3	0-3	0-3	0-3	0-3
		2-M	0-3	0-3	0-3	0-3	0-3
		3-M	0-3	0-3	0-3	0-3	0-3
		4-M	0-3	0-3	0-3	0-3	0-3
		5-F	0-3	0-3	0-3	0-3	5-8
		6-F	0-3	0-3	0-3	0-3	0-3
		7-F	0-3	0-3	0-3	0-3	0-3
		8-F	0-3	0-3	0-3	0-3	0-3
PC	15% Non-Irradiated Papaya	9-M	0-3	0-3	0-3	0-3	0-3
		10-M	0-3	0-3	0-3	0-3	0-3
		11-M	0-3	0-3	0-3	0-3	0-3
		12-M	0-3	0-3	0-3	0-3	0-3
		13-F	0-3	0-3	0-3	0-3	5-8
		14-F	0-3	0-3	0-3	0-3	4
		15-F	0-3	0-3	0-3	0-3	0-3
		16-F	0-3	0-3	0-3	0-3	0-3
I	15% Papaya Irradiated at 75,000 rads	17-M	0-3	0-3	0-3	0-3	0-3
		18-M	0-3	0-3	0-3	0-3	4
		19-M	0-3	0-3	0-3	0-3	0-3
		20-M	0-3	0-3	0-3	0-3	0-3
		21-F	0-3	0-3	0-3	0-3	0-3
		22-F	0-3	0-3	0-3	0-3	0-3
		23-F	0-3	0-3	0-3	0-3	0-3
		24-F	0-3	0-3	0-3	0-3	9-12
II	15% Papaya Irradiated at 200,000 rads	25-M	0-3	0-3	0-3	0-3	0-3
		26-M	0-3	0-3	0-3	0-3	0-3
		27-M	0-3	0-3	0-3	0-3	0-3
		28-M	0-3	0-3	0-3	0-3	0-4
		29-F	0-3	0-3	0-3	0-3	0-3
		30-F	0-3	0-3	0-3	0-3	4
		31-F	0-3	0-3	0-3	0-3	0-3
		32-F	0-3	0-3	0-3	0-3	0-3

TABLE XIX

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Volume/24 hours,
ml

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6*	12	18	24
NC	None	1-M	120	350	255	300	225
		2-M	200	540	70	110	250
		3-M	180	420	90	120	120
		4-M	240	350	90	90	90
		5-F	170	550	560	320	165
		6-F	40	520	490	100	190
		7-F	190	470	415	360	250
		8-F	20	530	100	75	115
PC	15% Non-Irradiated Papaya	9-M	250	510	550	180	210
		10-M	120	580	565	110	140
		11-M	190	520	480	120	215
		12-M	70	510	335	230	125
		13-F	190	530	210	100	125
		14-F	70	555	140	70	500
		15-F	50	525	435	230	65
		16-F	50	490	550	230	140
I	15% Papaya Irradiated at 75,000 rads	17-M	30	570	120	110	140
		18-M	40	550	250	250	135
		19-M	70	555	100	220	180
		20-M	100	565	110	100	110
		21-F	260	580	100	110	145
		22-F	110	560	180	150	210
		23-F	50	545	130	290	120
		24-F	400	520	100	120	80
II	15% Papaya Irradiated at 200,000 rads	25-M	80	575	190	220	170
		26-M	120	590	145	160	165
		27-M	230	595	210	270	125
		28-M	140	580	150	260	290
		29-F	50	520	120	120	135
		30-F	130	590	230	140	130
		31-F	140	570	145	160	185
		32-F	30	560	200	120	245

* intubated with 500cc H₂O just prior to urine collection

TABLE XX

TEST MATERIAL: Low-Dose Irradiated Papayas

Urological Studies: Kidney Function Test,
percent excretion after 2 hours

Group	Dietary Level (%)	Dog Number and Sex	Months:				
			0	6	12	18	24
NC	None	1-M	46	44	25	35	34
		2-M	49	39	43	39	51
		3-M	46	51	44	47	17
		4-M	46	53	33	48	51
		5-F	47	58	37	36	53
		6-F	52	36	38	60	62
		7-F	52	55	44	23	43
		8-F	48	57	41	43	65
PC	15% Non-Irradiated Papaya	9-M	44	58	63	44	26
		10-M	33	49	43	38	79
		11-M	41	40	36	44	59
		12-M	39	42	29	41	49
		13-F	34	38	52	40	59
		14-F	24	38	43	41	51
		15-F	36	48	42	36	62
		16-F	41	41	29	52	64
I	15% Papaya Irradiated at 75,000 rads	17-M	41	48	43	39	65
		18-M	25	76	44	42	51
		19-M	46	55	30	21	47
		20-M	48	48	27	13	45
		21-F	50	58	24	40	53
		22-F	37	52	45	45	51
		23-F	47	56	43	42	51
		24-F	44	58	37	37	58
II	15% Papaya Irradiated at 200,000 rads	25-M	54	58	36	41	55
		26-M	32	54	41	40	38
		27-M	39	68	31	48	51
		28-M	45	35	41	27	53
		29-F	40	57	47	34	58
		30-F	35	50	38	48	64
		31-F	34	63	40	46	54
		32-F	28	54	47	47	60

Note: Phenolsulfophthalein method.

G. Reproduction Studies

1. Mating Data

The results of the mating data are presented in Table XXI.

Due to poor pup survival, female animal 22 and her mate, male animal 18, were retained from test group I for further matings.

Female animal 31 (test group II) was bred twice during the study and failed to become pregnant on both occasions. This animal and her mate (animal 27) were retained at the conclusion of the investigation. In addition, one proven male and one proven female were retained from test group II for the purpose of crossbreeding with animals 31-F and 27-M.

TABLE XXI

TEST MATERIAL: Low-Dose Irradiated Papayas

Mating Data

Group	Dietary Level (%)	Sire No.	Dam No.	Number of Pups Whelped			Number of Stillborn Pups			Number of Viable Pups			Number of Pups Alive at Four Weeks			Number of Pups Alive at Eight Weeks		
				M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
NC	None	1	6	0	5	5	0	0	0	0	5	5	0	5	5	0	5	5
		2	5	1	2	3	0	0	0	1	2	3	1	2	3	1	2	3
		3	8	3	2	5	0	0	0	3	2	5	3	2	5	3	2	5
		4	7	Aborted			-	-	-	-	-	-	-	-	-	-	-	-
		4*	7*	3	2	5	0	0	0	3	2	5	2	2	4	2	2	4
PC	15% Non-Irradiated Papaya	9	14	5	4	9	0	1	1	5	3	8	4	2	6	4	2	6
		10	15	2	2	4	0	0	0	2	2	4	2	2	4	2	2	4
		11	16	3	4	7	0	0	0	3	4	7	3	4	7	3	4	7
		12	13	7	1	8	0	0	0	7	1	8	7	1	8	7	1	8
I	15% Papaya Irradiated at 75,000 rads	17	21	6	0	6	0	0	0	6	0	6	2	0	2	2	0	2
		17*	21*	3	4	7	0	1	1	3	3	6	3	2	5	3	2	5
		18	22	6	2	8	1	0	1	5	2	7	1	0	1	1	0	1
		18*	22*	2	5	7	0	0	0	2	5	7	2	0	2	2	0	2
		19	24	3	4	7	0	0	0	3	4	7	3	4	7	2	4	6
		20	23	3	1	4	0	0	0	3	1	4	2	1	3	2	1	3
II	15% Papaya Irradiated at 200,000 rads	25	29	2	2	4	0	0	0	2	2	4	1	2	3	1	2	3
		26	32	4	2	6	0	0	0	4	2	6	4	2	6	4	2	6
		27	31	Did not become pregnant			-	-	-	-	-	-	-	-	-	-	-	-
		27*	31*	Did not become pregnant			-	-	-	-	-	-	-	-	-	-	-	-
		28	30	6	2	8	0	0	0	6	2	8	5	1	6	5	1	6

* Mated twice on client's request

M = Male F = Female T = Total

2. Pup Survival

A description of pup survival data, i. e. number of deaths, causes of death, and description of any abnormalities, for each litter is presented in pages 63 through 67.

Female No. 5 (NC) whelped three pups on the 69th day of gestation. All pups were normal and delivery was uneventful. All three pups survived the eight week testing period.

Female No. 6 (NC) whelped five pups on the 61st day of gestation. All pups were normal and delivery was uneventful. All five pups survived the eight week testing period.

Female No. 7 (NC) aborted during her first pregnancy and was consequently rebred. She whelped five pups on the 76th day of gestation. Delivery was uneventful and four of the five pups were of normal size. One pup was very small and immature and failed to nurse. This pup died the same day.

Female No. 8 (NC) whelped five pups on the 62nd day of gestation. No problems were encountered during delivery. All five pups were normal and survived the eight week testing period.

Female No. 13 (PC non-irradiated papayas) whelped eight pups on the 65th day of gestation. There was normal delivery with no assistance. All pups were healthy and normal and survived the eight week testing period.

Female No. 14 (PC non-irradiated papayas) whelped nine pups on the 63rd day of gestation. One pup was stillborn (lungs still collapsed) but all other pups appeared normal, although slightly smaller than average. One pup was found dead 12 days after whelping. Another pup was sat on by the mother on the 13th day and died one hour later. The remaining six pups survived the eight week testing period.

Female No. 15 (PC non-irradiated papayas) whelped four pups on the 65th day of gestation. Delivery was uneventful and all pups survived the eight week testing period.

Female No. 16 (PC non-irradiated papayas) whelped seven normal pups on the 62nd day of gestation with no difficulty. All seven pups developed normally and survived the eight week testing period.

Female No. 21 (T-1 papayas irradiated at 75,000 rads) first whelped six pups on the 63rd day of gestation. Two pups were cannibalized on the first day after whelping; a third pup was crushed against the side of the cage by the mother 36 days after whelping. A fourth pup became ill 40 days after birth and died on day 43. Gross and histopathologic examinations did not reveal the cause of death. The remaining two pups developed normally and survived the eight week testing period.

At the request of the Atomic Energy Commission dog 21 was rebred due to poor pup survival. She whelped seven pups on the 60th day of gestation. One pup was stillborn (lungs still collapsed) and another pup was sat on one day after whelping. The remaining five pups developed normally and survived the testing period.

Female No. 22 (T-I papayas irradiated at 200,000 rads)

first whelped eight pups on the 59th day of gestation. One pup was stillborn. Three pups died one day after delivery; one was sat on by the mother, one pup was extremely small and would not nurse and consequently died, and the third pup was found dead late in the afternoon of day one. A postmortem of this pup revealed aplasia of the small intestine. The stomach of this animal was directly attached to the colon. On the second day following whelping, another pup was found dead. Gross pathologic examination revealed that the spleen was attached to the abdominal wall. On the third day the mother pushed aside two more pups. These animals died on the fourth day. The remaining pup developed normally and survived the testing period.

At the request of the client, dog 22 was rebred during her next estrous cycle. She whelped seven pups on the 63rd day of gestation. All seven pups were smaller than average in both length and weight. One day after delivery three pups were dead. On the sixth day the mother rejected another pup; it died later that day. On the 16th day a fifth pup died. Gross pathologic examination revealed an enlarged and hemorrhagic spleen. The remaining two pups developed normally and remained healthy throughout the testing period.

Female No. 23 (T-I papayas irradiated at 75,000 rads) whelped

four pups on the 62nd day of gestation. One pup was sat on by the mother on the 9th day following birth and died later that day. The remaining three pups remained healthy throughout the eight week testing period.

Female No. 24 (T-I papayas irradiated at 75,000 rads)

whelped seven pups on the 67th day of gestation, delivery being uneventful. All seven pups appeared normal and healthy and nursed immediately. On the 49th day one pup was accidentally dropped and died shortly thereafter. Gross pathologic examination revealed a fractured skull and brain hemorrhage. The remaining six pups developed normally for the remainder of the eight week testing period.

Female No. 29 (T-II papayas irradiated at 200,000 rads)

whelped four pups on the 63rd day of gestation. On the 16th day one pup was rejected by its mother and pushed to the side of the cage. Hand feeding failed to keep the animal alive. The remaining three pups developed normally and survived the eight week testing period.

Female No. 30 (T-II papayas irradiated at 200,000 rads)

whelped eight pups on the 60th day of gestation. On the second day after whelping the mother rejected two of the pups and pushed them to the side of the cage. They died later that day. The remaining six pups developed normally and survived the testing period.

Female No. 31 (T-II papayas irradiated at 200,000 rads)

failed to become pregnant after being bred on the first occasion. At the request of the client she was rebred during her next estrous cycle but once again failed to become pregnant.

Female No. 32 (T-II papayas irradiated at 200,000 rads)

whelped six pups on the 62nd day of gestation without difficulty. All the pups were healthy and normal in size and began nursing immediately. At the conclusion of the testing period all six pups were still alive.

Due to poor pup survival, female animal 22 and her mate, male animal 18, were retained from test group I for the purpose of further matings.

Female animal 31 and her mate, male animal 27, were retained from test group II because they had failed to produce offspring on two occasions. In addition, two proven animals, male dog 28 and female dog 32, were also retained for the purpose of crossbreeding with animals 31 and 27.

3. Litter Weight Data

Total litter weights and mean litter weights for each test group are presented in Tables XXII and XXIII respectively.

There were no significant differences with respect to litter weights at any of the levels tested.

TABLE XXII
TEST MATERIAL: Low-Dose Irradiated Papayas
Litter Weight Data, grams

Group	Dietary Level (%)	Sire No.	Dam No.	0	1	2	3	4	5	6	7	8
NC	None	1	6	1,770 (5)	2,807 (5)	3,251 (5)	4,265 (5)	5,200 (5)	6,450 (5)	7,700 (5)	9,560 (5)	11,260 (5)
		2	5	1,047 (3)	1,738 (3)	2,493 (3)	3,380 (3)	4,170 (3)	4,940 (3)	5,650 (3)	6,400 (3)	6,740 (3)
		3	8	1,530 (5)	2,040 (5)	3,090 (5)	4,320 (5)	4,910 (5)	6,470 (5)	7,590 (5)	8,310 (5)	10,280 (5)
		4	7	-	-	-	-	-	-	-	-	-
		4*	7*	1,730 (5)	2,500 (4)	3,500 (4)	4,450 (4)	6,400 (4)	7,550 (4)	8,200 (4)	9,350 (4)	9,825 (4)
PC	15% Non-Irradiated	9	14	1,705 (8)	2,424 (8)	2,659 (6)	3,607 (6)	4,500 (6)	5,600 (6)	7,720 (6)	9,500 (6)	11,500 (6)
		10	15	1,096 (4)	1,943 (4)	2,998 (4)	3,303 (4)	4,050 (4)	5,100 (4)	6,600 (4)	7,880 (4)	9,900 (4)
		11	16	2,081 (7)	3,290 (7)	4,820 (7)	6,450 (7)	7,550 (7)	9,900 (7)	11,000 (7)	12,050 (7)	14,450 (7)
		12	13	2,134 (8)	3,400 (8)	5,330 (8)	6,910 (8)	9,570 (8)	10,430 (8)	13,980 (8)	14,850 (8)	17,630 (8)
C-1	15% Papaya Irradiated at 75,000 rads	17	21	1,450 (6)	2,090 (4)	3,220 (4)	4,600 (4)	5,100 (4)	5,420 (4)	4,460 (3)	2,980 (2)	3,180 (2)
		17*	21*	1,325 (6)	1,600 (5)	3,500 (5)	5,010 (5)	6,550 (5)	7,560 (5)	8,750 (5)	9,900 (5)	10,600 (5)
		18	22	1,375 (7)	388 (1)	590 (1)	720 (1)	1,060 (1)	1,400 (1)	1,750 (1)	1,800 (1)	2,340 (1)
		18*	22*	1,520 (7)	1,273 (3)	1,430 (2)	2,100 (2)	3,000 (2)	3,325 (2)	3,875 (2)	4,500 (2)	5,600 (2)
		19	24	1,830 (7)	2,760 (7)	3,890 (7)	5,200 (7)	6,450 (7)	6,920 (7)	9,040 (7)	9,200 (6)	11,850 (6)
		20	23	1,093 (4)	2,170 (4)	2,090 (3)	3,170 (3)	4,250 (3)	5,550 (3)	5,600 (3)	5,850 (3)	7,100 (3)

TABLE XXII continued
TEST MATERIAL: Low-Dose Irradiated Papayas
Litter Weight Data, grams

Group	Dietary Level (%)	Sire No.	Dam No.	Litter Weight at Week Indicated								
				0	1	2	3	4	5	6	7	8
-II	15% Papaya Irradiated at 200,000 rads	25	29	1,232 (4)	1,785 (3)	2,330 (3)	2,750 (3)	3,790 (3)	4,680 (3)	5,830 (3)	6,100 (3)	7,000 (3)
		26	32	1,786 (6)	3,160 (6)	4,300 (6)	5,950 (6)	7,290 (6)	9,980 (6)	11,570 (6)	14,870 (6)	16,250 (6)
		27	31	-	-	-	-	-	-	-	-	-
		27	31*	-	-	-	-	-	-	-	-	-
		28	30	1,737 (8)	2,500 (6)	4,220 (6)	5,700 (6)	7,120 (6)	8,320 (6)	10,000 (6)	12,800 (6)	16,500 (6)

Note: Number in parentheses indicates number of pups per litter.

Animals mated twice on client's request.

TABLE XXIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Mean Litter Weight, Grams

Group	Dietary Level (%)	Sire No.	Dam No.	Mean Litter Weight at Week Indicated									Overall Weight Gain
				0	1	2	3	4	5	6	7	8	
NC	None	1	6	354	561	650	853	1,040	1,290	1,540	1,912	2,252	1,898
		2	5	349	579	831	1,227	1,390	1,646	1,883	2,133	2,247	1,898
		3	8	306	680	618	864	982	1,294	1,518	1,662	2,056	1,750
		4	7	-	-	-	-	-	-	-	-	-	-
		4*	7*	346	625	875	1,112	1,600	1,888	2,050	2,338	2,456	2,110
		Mean		339	611	744	1,014	1,253	1,530	1,748	2,011	2,253	1,914
PC	15% Non-Irradiated	9	14	213	303	443	601	750	933	1,287	1,583	1,917	1,704
		10	15	274	486	750	826	1,012	1,275	1,650	1,970	2,475	2,201
		11	16	297	470	688	921	1,078	1,414	1,571	1,721	2,064	1,767
		12	13	267	425	666	864	1,196	1,304	1,748	1,856	2,204	1,937
		Mean		263	421	637	803	1,009	1,232	1,289	1,782	2,165	1,902

TABLE XXIII continued
 TEST MATERIAL: Low-Dose Irradiated Papayas
 Mean Litter Weight, Grams

Group	Dietary Level (%)	Sire No.	Dam No.	Mean Litter Weight at Week Indicated									Overall Weight Gain
				0	1	2	3	4	5	6	7	8	
T-I	15% Papaya Irradiated at 75,000 rads	17	21	242	522	805	1,150	1,275	1,355	1,487	1,490	1,590	1,348
		17*	21*	221	320	700	1,002	1,310	1,512	1,750	1,980	2,120	1,899
		18	22	196	388	590	720	1,060	1,400	1,750	1,800	2,340	2,144
		18*	22*	217	424	715	1,050	1,500	1,062	1,938	2,250	2,800	2,583
		19	24	261	394	556	743	921	988	1,291	1,533	1,975	1,714
		20	23	273	542	697	1,057	1,417	1,850	1,867	1,950	2,367	2,094
		Mean		235	432	677	954	1,247	1,461	1,680	1,834	2,199	1,964
T-II	15% Papaya Irradiated at 200,000 rads	25	29	308	595	777	917	1,263	1,560	1,943	2,033	2,333	2,025
		26	32	298	527	717	992	1,215	1,663	1,928	2,478	2,708	2,410
		27	31	-	-	-	-	-	-	-	-	-	-
		27*	31*	-	-	-	-	-	-	-	-	-	-
		28	30	217	417	703	950	1,187	1,387	1,667	2,133	2,750	2,533
		Mean		274	513	732	953	1,222	1,537	1,846	2,215	2,597	2,323

* Animals mated twice on client's request.

4. Hematologic and Blood Chemistry Studies

The following determinations were conducted on all surviving pups after eight weeks of age.

total leukocyte count
erythrocyte count
hemoglobin
hematocrit
differential leukocyte count
serum glutamic-oxalacetic transaminase
serum alkaline phosphatase

The results of these determinations are presented in Tables XXIV through XXVII.

There were no significant abnormalities noted at any of the levels tested.

TABLE XXIV

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Negative Control Group

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
1	6	1-F	8	13.8	4.31	10.0	30.6	62	34	0	4	0	21	11.87
		2-F	8	18.4	3.73	8.8	26.5	66	31	0	3	0	28	8.90
		3-F	8	17.9	4.71	10.8	31.3	66	32	2	0	0	25	5.86
		4-F	8	12.7	4.11	9.4	28.5	68	30	0	2	0	25	8.31
		5-F	8	13.8	4.21	9.6	28.7	69	29	0	2	0	25	8.70
2	5	1-M	8	13.2	5.69	12.9	40.0	67	33	0	0	0	23	11.32
		2-F	8	13.4	5.11	10.6	32.7	72	28	0	0	0	24	12.82
		3-F	8	11.3	4.70	9.8	29.4	74	25	0	1	0	19	12.38

TABLE XXIV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Negative Control Group

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
3	8	1-M	8	9.6	4.62	11.1	32.8	50	46	0	4	0	13	11.59
		2-M	8	14.8	4.64	10.6	31.1	58	41	0	1	0	19	13.55
		3-M	8	10.3	5.13	11.3	32.5	66	32	0	2	0	10	14.32
		4-F	8	12.1	4.73	11.2	32.2	62	36	0	2	0	14	17.31
		5-F	8	10.7	4.51	10.6	31.3	59	39	2	0	0	16	14.32
4	7	1-M	8	11.8	4.76	10.9	32.7	67	27	2	4	0	21	10.13
		2-M	8	12.8	4.65	10.8	30.8	55	38	3	4	0	22	10.55
		3-F	8	9.6	4.56	10.0	30.1	49	47	3	1	0	26	11.49
		4-F	8	12.4	4.74	11.1	32.3	48	46	0	6	0	19	8.32

TABLE XXV

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Positive Control Group

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
9	14	1-M	8	12.1	4.30	9.3	28.6	70	29	0	1	0	25	12.55
		2-M	8	10.7	4.31	10.2	29.8	56	42	0	2	0	35	13.72
		3-M	8	8.4	3.89	8.5	25.7	82	18	0	0	0	32	15.70
		4-M	8	10.6	3.90	9.2	26.9	79	19	2	0	0	28	15.96
		5-F	8	8.1	4.10	9.2	27.2	70	30	0	0	0	27	11.42
		6-F	8	6.3	4.08	8.1	27.2	85	14	0	1	0	29	14.20
10	15	1-M	8	11.4	5.09	11.4	36.1	44	53	2	1	0	38	11.64
		2-M	8	10.3	4.30	9.4	28.5	70	30	0	0	0	25	11.20
		3-F	8	16.9	5.07	12.0	34.2	66	33	0	1	0	28	9.92
		4-F	8	16.7	4.44	10.0	30.6	65	34	1	0	0	28	11.64

TABLE XXV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Positive Control Group

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
11	16	1-M	8	14.4	4.69	10.4	30.6	54	45	0	1	0	26	15.37
		2-M	8	15.6	4.65	10.5	29.9	50	50	0	0	0	29	12.07
		3-M	8	11.5	4.79	11.0	31.5	60	38	0	2	0	27	16.74
		4-F	8	12.5	4.87	11.4	32.1	50	47	0	3	0	24	17.31
		5-F	8	24.8	4.96	10.8	31.7	80	20	0	0	0	34	15.11
		6-F	8	11.8	4.64	11.2	30.7	32	48	0	0	0	30	12.80
		7-F	8	16.1	4.94	11.1	31.2	67	32	1	0	0	24	11.83
12	13	1-M	8	12.2	4.61	10.4	32.6	55	40	4	1	0	21	12.38
		2-M	8	9.8	4.43	10.2	31.1	56	37	3	4	0	22	13.97
		3-M	8	13.0	4.57	10.5	31.4	71	25	2	2	0	26	14.69
		4-M	8	13.6	4.66	10.8	32.2	58	38	2	2	0	22	13.74
		5-M	8	13.5	4.48	10.2	30.7	65	30	2	3	0	24	12.60
		6-M	8	11.4	4.45	10.0	29.3	44	51	4	1	0	21	11.94
		7-M	8	14.6	4.52	10.2	29.6	58	36	3	3	0	18	13.51
		8-F	8	13.9	4.98	11.5	33.4	67	28	4	1	0	14	15.18

TABLE XXVI

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Test Group I (75,000 Rads)

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxaloacetic Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
17	21	1-M	8	9.2	3.95	5.8	23.2	56	41	2	1	0	24	10.84
		2-M	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17	21	1-M	8	14.3	4.13	10.4	28.3	67	29	2	2	0	14	16.50
		2-M	8	15.7	4.32	10.8	30.0	51	41	6	2	0	12	19.95
		3-M	8	16.6	4.34	10.6	29.9	51	44	4	1	0	15	19.07
		4-F	8	18.7	4.08	10.4	28.9	50	48	1	1	0	15	19.95
		5-F	8	11.3	4.12	10.3	27.7	54	45	0	1	0	12	16.92
18	22	1-M	8	10.7	4.63	10.4	30.5	57	42	0	1	0	30	16.46
19	22	1-M	8	13.2	4.58	10.8	28.3	73	19	5	3	0	32	15.08
		2-M	8	11.9	4.41	9.7	26.8	55	32	11	2	0	34	13.07

N/A - Data not available

TABLE XXVI continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Test Group I (75,000 Rads)

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic-Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
19	24	1-M	8	14.8	4.33	9.8	29.3	76	23	1	0	0	22	12.95
		2-M	8	16.3	3.92	8.7	25.4	66	32	2	0	0	24	12.95
		3-F	8	15.8	4.06	8.9	26.8	58	37	5	0	0	17	16.77
		4-F	8	16.1	4.38	10.3	30.7	71	27	0	0	0	24	12.55
		5-F	8	9.6	3.97	8.7	25.4	76	23	0	1	0	18	16.52
		6-F	8	9.0	4.23	9.1	27.1	72	28	0	0	0	21	14.01
20	23	1-M	8	16.9	4.69	10.2	28.9	71	28	1	0	0	14	10.32
		2-M	8	18.0	5.14	11.3	32.1	61	36	0	3	0	11	10.14
		3-F	8	24.6	5.15	11.3	32.6	49	48	3	0	0	15	8.77

Animals 17, 21, 18 and 22 were rebred as per client's request.

TABLE XXVII

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Test Group II (200,000 Rads)

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic- Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
25	29	1-M	8	13.4	4.85	10.8	32.5	69	28	3	0	0	18	9.5
		2-F	8	11.5	5.60	12.3	34.8	54	29	2	15	0	22	11.5
		3-F	8	12.0	4.66	10.3	30.2	61	33	1	5	0	16	9.9
26	32	1-M	8	14.0	4.68	11.0	32.1	63	34	3	0	0	25	20.44
		2-M	8	15.4	4.56	10.6	30.7	65	30	3	2	0	25	17.10
		3-M	8	14.0	3.85	9.9	28.0	64	27	6	3	0	22	18.28
		4-M	8	15.2	4.37	10.1	27.9	62	37	0	1	0	24	17.39
		5-F	8	15.3	3.94	9.9	28.0	60	38	1	1	0	24	14.88
		6-F	8	14.7	3.75	7.2	25.7	61	37	1	1	0	29	14.61

TABLE XXVII continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Test Group II (200,000 Rads)

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic- Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
27*	31*													

* Animals 27 and 31 were rebred as per client's request, but animal 31 did not become pregnant.

TABLE XXVII continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Individual Hematologic and Blood Chemistry Studies - Puppies

Test Group II (200,000 Rads)

Sire No.	Dam No.	Pup Number and Sex	Age (weeks)	Total Leukocyte Count (thousands/mm ³)	Erythrocyte Count (millions/mm ³)	Hemoglobin Concentration (g/100 ml)	Hematocrit (%)	Differential Leukocyte Count (percent)					Serum Glutamic Oxalacetic- Transaminase (Dade Units)	Serum Alkaline Phosphatase (King-Armstrong Units)
								Neutrophils	Lymphocytes	Monocytes	Eosinophils	Basophils		
28	30	1-M	8	13.8	3.69	5.1	19.0	63	36	1	0	0	16	11.89
		2-M	8	10.4	4.83	8.0	25.7	53	44	1	2	0	17	18.55
		3-M	8	10.8	4.34	9.0	26.3	54	42	1	3	0	19	19.19
		4-M	8	14.1	5.24	10.0	31.1	69	28	2	1	0	19	16.39
		5-M	8	12.3	4.16	8.7	24.9	64	35	1	0	0	23	13.24
		6-F	8	10.7	4.13	8.0	23.8	51	47	2	0	0	19	14.64

H. Pathologic Studies

1. Organ Weight Data

The organ weight data are presented in Tables XXVIII through XXXVI.

One of the six animals sacrificed after 24 months of testing in test group I (75,000 rads) exhibited an elevated liver to body weight ratio when compared to the animals in the negative control group. The remaining five animals sacrificed in this group displayed normal liver to body weight ratios.

No other significant abnormalities were noted with respect to the organ weight data.

Dashes in tables indicate animals retained at the conclusion of the investigation for the purpose of rebreeding.

The organ to body weight ratios were calculated using the body weight of the animal at the time of sacrifice. This weight is not necessarily the same as the weight after 104 weeks of testing.

TABLE XXVIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Liver

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	315.8	33.2
		2-M	364.5	37.2
		3-M	331.3	38.1
		4-M	405.3	33.8
		5-F	262.9	27.4
		6-F	353.3	30.2
		7-F	356.3	36.7
		8-F	296.0	41.1
PC	15% Non-Irradiated Papaya	9-M	407.1	40.3
		10-M	348.0	35.9
		11-M	594.2	39.1
		12-M	396.2	39.6
		13-F	513.8	39.8
		14-F	465.7	38.8
		15-F	352.4	42.0
		16-F	338.8	30.2
T-I	15% Papaya Irradiated at 75,000 rads	17-M	487.8	66.8
		18-M	-	-
		19-M	345.9	36.8
		20-M	561.1	44.2
		21-F	422.5	37.1
		22-F	-	-
		23-F	448.4	46.7
		24-F	396.7	36.7
T-II	15% Papaya Irradiated at 200,000 rads	25-M	403.7	37.7
		26-M	420.0	28.6
		27-M	-	-
		28-M	-	-
		29-F	363.3	34.9
		30-F	371.9	35.4
		31-F	-	-
		32-F	-	-

TABLE XXIX

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Kidneys

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)			Organ/Body Weight Ratio (g/1,000 g)
			Left	Right	Total	
NC	None	1-M	24.8	23.7	48.5	5.10
		2-M	32.2	31.0	63.2	6.45
		3-M	25.3	24.9	50.2	5.77
		4-M	28.8	28.8	57.6	4.80
		5-F	22.9	23.9	46.8	4.87
		6-F	30.6	30.9	61.5	5.26
		7-F	27.0	26.1	53.1	5.47
		8-F	19.3	19.4	38.7	5.37
PC	15% Non-Irradiated Papaya	9-M	27.8	28.8	56.6	5.60
		10-M	23.9	23.8	47.7	4.92
		11-M	42.7	45.7	88.4	5.81
		12-M	26.7	23.0	49.7	4.97
		13-F	32.1	32.2	64.3	4.98
		14-F	32.0	31.8	63.8	5.32
		15-F	23.1	22.8	45.9	5.46
		16-F	26.4	24.3	50.7	4.53
T-I	15% Papaya Irradiated at 75,000 rads	17-M	27.1	27.7	54.8	7.51
		18-M	-	-	-	-
		19-M	29.0	29.8	58.8	6.26
		20-M	37.7	38.6	76.3	6.01
		21-F	32.4	33.3	54.7	5.76
		22-F	-	-	-	-
		23-F	32.5	34.0	66.5	6.93
		24-F	34.4	31.7	66.1	6.12
T-II	15% Papaya Irradiated at 200,000 rads	25-M	35.7	35.3	71.0	6.64
		26-M	40.8	39.8	80.6	5.48
		27-M	-	-	-	-
		28-M	-	-	-	-
		29-F	24.4	25.8	50.2	4.83
		30-F	25.4	27.0	52.4	4.99
		31-F	-	-	-	-
		32-F	-	-	-	-

TABLE XXX

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Heart

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	83.4	8.78
		2-M	84.9	8.66
		3-M	71.6	8.23
		4-M	91.7	7.64
		5-F	80.8	8.42
		6-F	89.9	7.68
		7-F	90.7	9.35
		8-F	64.7	8.99
PC	15% Non-Irradiated Papaya	9-M	79.9	7.91
		10-M	76.2	7.85
		11-M	117.8	7.75
		12-M	75.1	7.51
		13-F	116.1	9.00
		14-F	79.7	6.64
		15-F	63.1	7.51
		16-F	87.2	7.78
T-I	15% Papaya Irradiated at 75,000 rads	17-M	62.6	8.58
		18-M	-	-
		19-M	89.1	9.48
		20-M	90.1	7.09
		21-F	93.3	8.18
		22-F	-	-
		23-F	86.4	9.00
		24-F	74.9	6.94
T-II	15% Papaya Irradiated at 200,000 rads	25-M	98.4	9.20
		26-M	112.6	7.66
		27-M	-	-
		28-M	-	-
		29-F	92.8	8.92
		30-F	92.0	8.76
		31-F	-	-
		32-F	-	-

TABLE XXXI

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Brain

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	85.9	9.04
		2-M	70.4	7.18
		3-M	70.9	8.15
		4-M	81.5	6.79
		5-F	64.7	6.74
		6-F	86.1	7.36
		7-F	67.7	6.98
		8-F	78.4	10.89
PC	15% Non-Irradiated Papaya	9-M	81.6	8.08
		10-M	78.6	8.10
		11-M	88.3	5.81
		12-M	77.5	7.75
		13-F	81.3	6.30
		14-F	77.1	6.42
		15-F	63.8	7.60
		16-F	71.7	6.40
T-I	15% Papaya Irradiated at 75,000 rads	17-M	68.3	9.36
		18-M	-	-
		19-M	75.8	8.06
		20-M	85.6	6.75
		21-F	79.3	7.00
		22-F	-	-
		23-F	70.8	7.37
		24-F	74.8	6.92
T-II	15% Papaya Irradiated at 200,000 rads	25-M	72.7	6.79
		26-M	75.8	5.16
		27-M	-	-
		28-M	-	-
		29-F	65.3	6.28
		30-F	82.0	7.81
		31-F	-	-
		32-F	-	-

TABLE XXXII

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Spleen

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	24.3	2.56
		2-M	21.8	2.22
		3-M	23.8	2.74
		4-M	41.5	3.46
		5-F	36.9	3.84
		6-F	24.8	2.12
		7-F	38.3	2.95
		8-F	13.7	1.90
PC	15% Non-Irradiated Papaya	9-M	18.6	1.84
		10-M	20.6	2.12
		11-M	34.1	2.24
		12-M	34.0	3.40
		13-F	35.4	2.74
		14-F	24.7	2.06
		15-F	20.3	2.42
		16-F	24.4	2.18
T-I	15% Papaya Irradiated at 75,000 rads	17-M	17.3	2.40
		18-M	-	-
		19-M	19.4	2.06
		20-M	31.9	2.51
		21-F	29.8	2.61
		22-F	-	-
		23-F	23.6	2.46
		24-F	26.3	2.44
T-II	15% Papaya Irradiated at 200,000 rads	25-M	40.7	3.80
		26-M	29.4	2.00
		27-M	-	-
		28-M	-	-
		29-F	31.6	3.04
		30-F	22.0	2.10
		31-F	-	-
		32-F	-	-

TABLE XXXIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Gonads

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)			Organ/Body Weight Ratio (g/1,000 g)
			Left	Right	Total	
NC	None	1-M	8.3	9.6	17.3	1.82
		2-M	8.1	8.7	16.8	1.71
		3-M	5.7	6.2	11.9	1.37
		4-M	9.8	9.2	19.0	1.58
		5-F	0.297	0.268	0.565	0.0588
		6-F	0.545	0.535	1.080	0.0923
		7-F	0.575	0.511	1.086	0.112
		8-F*	0.544	0.606	1.150	0.160
PC	15% Non-Irradiated Papaya	9-M	8.8	8.5	17.3	1.71
		10-M	8.3	8.0	16.3	1.68
		11-M	10.5	11.0	21.5	1.41
		12-M	7.9	8.5	16.4	1.64
		13-F	0.571	0.556	1.127	0.0874
		14-F	0.792	0.958	1.750	0.146
		15-F	0.318	0.345	0.663	0.0789
		16-F	0.600	0.462	1.062	0.0948
T-I	15% Papaya Irradiated at 75,000 rads	17-M	6.9	6.9	13.8	1.89
		18-M	-	-	-	-
		19-M	5.6	6.3	11.9	1.26
		20-M	6.8	7.0	13.8	1.09
		21-F	0.521	0.527	1.048	0.0919
		22-F	-	-	-	-
		23-F	0.384	0.443	0.827	0.0861
		24-F	1.046	0.657	1.702	0.158
T-II	15% Papaya Irradiated at 200,000 rads	25-M	8.3	9.4	17.7	1.65
		26-M	9.6	9.0	18.6	1.26
		27-M	-	-	-	-
		28-M	-	-	-	-
		29-F	0.406	0.361	0.767	0.0737
		30-F	0.535	0.655	1.190	0.113
		31-F	-	-	-	-
		32-F	-	-	-	-

* Animal in estrus

TABLE XXXIV

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Adrenal Glands

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	1.284	0.135
		2-M	1.021	0.104
		3-M	1.337	0.154
		4-M	1.664	0.139
		5-F	1.096	0.114
		6-F	1.944	0.166
		7-F	1.464	0.151
		8-F	1.108	0.154
PC	15% Non-Irradiated Papaya	9-M	1.043	0.103
		10-M	1.104	0.114
		11-M	1.368	0.0900
		12-M	1.176	0.118
		13-F	1.256	0.0974
		14-F	1.743	0.145
		15-F	1.243	0.148
		16-F	1.247	0.111
T-I	15% Papaya Irradiated at 75,000 rads	17-M	1.142	0.156
		18-M	-	-
		19-M	1.231	0.131
		20-M	2.536	0.200
		21-F	1.447	0.127
		22-F	-	-
		23-F	1.196	0.124
		24-F	1.136	0.105
T-II	15% Papaya Irradiated at 200,000 rads	25-M	1.455	0.136
		26-M	1.310	0.0891
		27-M	-	-
		28-M	-	-
		29-F	1.170	0.112
		30-F	1.476	0.140
		31-F	-	-
		32-F	-	-

TABLE XXXV

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Thyroid Gland

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	1.067	0.112
		2-M	0.751	0.0766
		3-M	0.890	0.102
		4-M	1.465	0.122
		5-F	0.699	0.0728
		6-F	1.828	0.156
		7-F	0.885	0.0912
		8-F	0.658	0.0914
PC	15% Non-Irradiated Papaya	9-M	0.621	0.0615
		10-M	0.731	0.0754
		11-M	0.829	0.0545
		12-M	0.988	0.0988
		13-F	0.963	0.0746
		14-F	1.283	0.107
		15-F	0.538	0.0640
		16-F	0.718	0.0641
T-I	15% Papaya Irradiated at 75,000 rads	17-M	0.674	0.0923
		18-M	-	-
		19-M	N/A	N/A
		20-M	1.438	0.113
		21-F	0.826	0.0724
		22-F	-	-
		23-F	1.228	0.128
		24-F	0.720	0.667
T-II	15% Papaya Irradiated at 200,000 rads	25-M	1.306	0.122
		26-M	1.016	0.0691
		27-M	-	-
		28-M	-	-
		29-F	0.401	0.0386
		30-F	0.863	0.0822
		31-F	-	-
		32-F	-	-

N/A = Data not available

TABLE XXXVI

TEST MATERIAL: Low-Dose Irradiated Papayas

Organ Weight Data: Pituitary Gland

Group	Dietary Level (ppm)	Dog Number and Sex	Organ Weight (g)	Organ/Body Weight Ratio (g/1,000 g)
NC	None	1-M	0.064	0.067
		2-M	0.113	0.0115
		3-M	0.077	0.0088
		4-M	0.177	0.0147
		5-F	0.098	0.0102
		6-F	0.147	0.0126
		7-F	0.097	0.0100
		8-F	0.109	0.0151
PC	15% Non-Irradiated Papaya	9-M	0.065	0.00644
		10-M	0.066	0.00680
		11-M	0.122	0.00803
		12-M	0.082	0.00820
		13-F	0.117	0.00907
		14-F	0.091	0.00758
		15-F	0.060	0.00714
		16-F	0.097	0.00866
T-I	15% Papaya Irradiated at 75,000 rads	17-M	0.070	0.00959
		18-M	-	-
		19-M	0.055	0.00585
		20-M	0.116	0.00913
		21-F	0.130	0.0114
		22-F	-	-
		23-F	0.113	0.0118
		24-F	0.095	0.00880
T-II	15% Papaya Irradiated at 200,000 rads	25-M	0.080	0.00748
		26-M	N/A	N/A
		27-M	-	-
		28-M	-	-
		29-F	0.051	0.00490
		30-F	0.104	0.00990
		31-F	-	-
		32-F	-	-

N/A - Data not available

2. Femur Lengths

Left and right femur lengths are presented in Table XXXVII.

Dashes in tables indicate animals retained at the conclusion of the investigation for the purpose of rebreeding.

TABLE XXXVII

TEST MATERIAL: Low-Dose Irradiated Papayas

Left and Right Femur Lengths

Group	Dietary Level (ppm)	Dog Number and Sex	Left Femur (cm)	Right Femur (cm)
NC	None	1-M	11.2	11.0
		2-M	11.5	11.5
		3-M	11.4	11.4
		4-M	12.4	12.6
		5-F	10.5	10.6
		6-F	11.9	12.0
		7-F	10.6	10.6
		8-F	10.5	10.5
PC	15% Non-Irradiated Papaya	9-M	12.0	12.0
		10-M	12.3	12.2
		11-M	13.3	13.3
		12-M	11.8	11.8
		13-F	12.2	12.2
		14-F	11.8	11.8
		15-F	10.9	10.9
		16-F	11.7	11.8
T-I	15% Papaya Irradiated at 75,000 rads	17-M	11.0	11.0
		18-M	-	-
		19-M	12.1	12.1
		20-M	12.6	12.7
		21-F	12.0	12.0
		22-F	-	-
		23-F	11.0	11.0
		24-F	9.8	9.8
T-II	15% Papaya Irradiated at 200,000 rads	25-M	11.5	11.5
		26-M	13.2	13.2
		27-M	-	-
		28-M	-	-
		29-F	10.5	10.5
		30-F	11.9	11.9
		31-F	-	-
		32-F	-	-

3. Gross and Histopathologic Findings

a. Parental Generation

The gross and histopathologic findings for the parental generation are presented in Tables XXXVIII through XLI. All tissues and organs not mentioned were normal.

IBT No. C7042
AEC

November 18, 1971

I have completed a histopathologic evaluation of a series of dog tissues from IBT C7042. There are no changes which can be attributed to the compound. The lesions described are those of spontaneous disease and they are not unusual for the dog.

Ward R. Richter

Ward R. Richter, D. V. M., M. S.
Diplomate, American College of
Veterinary Pathologists

TABLE XXXVIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Negative Control Group

Dog Number and Sex	Organ	Gross	Grade	Histologic	Grade
1-M	Kidneys	Hyperemia	+	-	-
	Lungs	Hyperemia	+++	-	-
2-M	-	-	-	-	-
3-M	-	-	-	-	-
4-M	Lungs	Hyperemia	++	Congestion	+
		Focal pneumonitis	+	-	-
5-F	-	-	-	-	-
6-F	-	-	-	-	-
7-F	-	-	-	-	-
8-F	Kidneys	-	-	Focal lymphoid infiltration	+
	Lymph node	-	-	Small granuloma	+

Grading System

+ = minimal or trace

++ = mild

+++ = moderate

++++ = severe

TABLE XXXIX

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Positive Control Group: 15% Non-irradiated Papaya

Dog Number and Sex	Organ	Gross	Grade	Histologic	Grade
9-M	-	-	-	-	-
10-M	Muscle	-	-	Focal myositis	+
11-M	Prostate	-	-	Focal prostatitis	+
	Spleen	-	-	Healed scar with hemosiderosis	+
12-M	Kidneys	-	-	Focal lymphoid infiltration	+
13-F	Liver	-	-	Focal lymphoid infiltration	+
14-F	-	-	-	-	-
15-F	-	-	-	-	-
16-F	-	-	-	-	-

Grading System

+ = minimal or trace

++ = mild

+++ = moderate

++++ = severe

TABLE XL

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group I: 15% Papaya Irradiated at 75,000 rads

Dog Number and Sex	Organ	Gross	Grade	Histologic	Grade
17-M	-	-	-	-	-
18-M	Not yet sacrificed				
19-M	Lung	Hyperemia	++	-	-
	Salivary gland	-	-	Adenoma of salivary gland	+
20-M	-	-	-	-	-
21-F	Lung	Hyperemia	+	Focal interstitial pneumonia	+
22-F	Not yet sacrificed				
23-F	Liver	-	-	Congestion	+
24-F	Kidneys	-	-	Focal interstitial nephritis	+
	Thyroid	-	-	Thyroiditis	+

Grading System

+ = minimal or trace
 ++ = mild
 +++ = moderate
 ++++ = severe

TABLE XLI

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group II: 15% Papaya Irradiated at 200,000 rads

Dog Number and Sex	Organ	Gross	Grade	Histologic	Grade
25-M	Lung	Hyperemia	++	Focal interstitial pneumonia	+
26-M	Kidney	-	-	Focal lymphoid infiltration	+
	Lung	Petechiae - adhesions on right half lower two lobes connected to thoracic peritoneum	++	-	-
27-M	Not yet sacrificed				
28-M	Not yet sacrificed				
29-F	Lung	-	-	Focal interstitial pneumonia	+
30-F	-	-	-	-	-
31-F	Not yet sacrificed				
32-F	Not yet sacrificed				

Grading System

+ = minimal or trace

++ = mild

+++ = moderate

++++ = severe

b. Progeny

Gross and histopathologic examinations were performed on pups that died before reaching eight weeks of age.

The results of these findings are presented in Tables XLII through XLV.

IBT No. C7042
AEC

The sections from the puppies in study C7042 have been studied. One section of heart from a T-I animal reveals massive necrosis just under the endocardial surface of the left ventricle and possible early mineralization. The cause of this lesion is not apparent and its relationship to the test material not evident.

No changes attributable to the action of the test material are observed in any of the sections studied.

Donald H. Yost, D.V.M.
Diplomate, American College of
Veterinary Pathologists

TABLE XLII

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Negative Control Group

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
4	7	M	-	-	-	-	-

Grading System

- + = minimal or trace
- ++ = mild
- +++ = moderate
- ++++ = severe

TABLE XLIII

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Positive Control Group - 15% Non-Irradiated Papaya

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
9	14	M	Kidneys	Left kidney missing	-	-	-
			Liver	-	-	Active hematopoiesis	-
		F	-	-	-	-	-

Grading System

+ = minimal or trace
 ++ = mild
 +++ = moderate
 ++++ = severe

TABLE XLIV

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group I - 15% Papaya Irradiated at 75,000 Rads

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
17	21*	M	Bone	-	-	Hemorrhage in marrow	+
			Brain	Hemorrhages in frontal lobes	+	-	-
			Kidneys	-	-	Hydropic degeneration in distal tubules	++
			Lung	Hyperemia Edema	++	Alveolar edema	++
			Spleen	-	-	Depleted of lymphoid elements	+
		M	Lung	-	-	Focal inflammation	+
			Small intestine	Inflammation	++	-	-

TABLE XLIV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group I - 15% Papaya Irradiated at 75,000 Rads

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
17	21**	F	Liver	-	-	Active hematopoiesis	+
			Spleen	-	-	Congestion	+
		F	Lung	Collapsed	-	-	-
18	22*	M	Liver	-	-	Congestion	+
						Active hematopoiesis	+
			Lung	Collapsed	-	-	-
		M	Liver	Aplasia	-	Active hematopoiesis	+
			Small intestine	Inflammation	-	Congested mucosa	+
		M	Kidneys	No right kidney	-	-	-
			Liver	-	-	Active hematopoiesis	+
		F	Liver	-	-	Active hematopoiesis	+

TABLE XLIV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group I - 15% Papaya Irradiated at 75,000 Rads

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
18	22*	F	Liver	-		Active hematopoiesis	+
			Lung	Hyperemia	+++	-	-
			Spleen	Adhered to abdominal wall	+	-	-
			Stomach	-	-	Congestion	+
		M	Liver	-	-	Active hematopoiesis	+
			Lung	Hyperemia	+++	-	-
				Congestion	++	-	-
			Trachea	Phlem in trachea	++	-	-
		M	Liver	-	-	Active hematopoiesis	+
18	22**	F	-	-	-	-	-
		F	Lung	Hyperemia	+++	-	-

TABLE XLIV continued

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group I - 15% Papaya Irradiated at 75,000 Rads

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
18	22**	F	Lung	Hyperemia	+++	-	-
		F	Spleen	Very large and hemorrhagic	+++	Extramedullary hematopoiesis	+
19	24	M	Brain	Blood clot just under fractured skull cap	++	-	-
20	23	M	Heart	-	-	Necrosis	++++
			Liver	-	-	Mineralization Congestion	+ +

* First litter

** Second litter

Grading System

+ = minimal or trace

++ = mild

+++ = moderate

++++ = severe

TABLE XLV

TEST MATERIAL: Low-Dose Irradiated Papayas

Gross and Histologic Findings

Test Group II - 15% Papaya Irradiated at 200,000 Rads

Sire	Dam	Pup Sex	Organ	Gross	Grade	Histologic	Grade
25	29	M	Heart	-	-	Focal hemorrhage in left ventricle	+
28	30	F	Liver	-	-	Active hematopoiesis	+
		F	Liver	-	-	Active hematopoiesis	+
			Lung	Hyperemia	++	Congestion	+

Grading System

+ = minimal or trace

++ = mild

+++ = moderate

++++ = severe