### Analytical Data

Vitamin and microbiological assays were performed on PicoLab® Rodent Diet 20 5053 before and after irradiation. As the results indicate, irradiation achieved excellent reduction of the microbial load while having minimal effects on the vitamin content of the product. PicoLab® products are formulated to provide optimal vitamin levels after irradiation.

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>% Retained After Irradiation</th>
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<tbody>
<tr>
<td>Vitamin A</td>
<td>94</td>
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<tr>
<td>Vitamin D</td>
<td>91</td>
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<tr>
<td>Vitamin E</td>
<td>100</td>
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<tr>
<td>Thiamin</td>
<td>100</td>
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<tr>
<td>Riboflavin</td>
<td>100</td>
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<tr>
<td>Pantothenic Acid</td>
<td>100</td>
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<tr>
<td>Vitamin B₁₂</td>
<td>92</td>
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</tbody>
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<tr>
<th>Microbiological Assay</th>
<th>Units</th>
<th>Control</th>
<th>Irradiated</th>
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<tr>
<td>Total aerobic plate</td>
<td>CFU/g</td>
<td>51667</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total yeast</td>
<td>CFU/g</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total mold</td>
<td>CFU/g</td>
<td>417</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total mesophilic anaerobic spores</td>
<td>MPN/g</td>
<td>1100</td>
<td>&lt;3</td>
</tr>
<tr>
<td>Mesophilic aerobic spores</td>
<td>CFU/g</td>
<td>45500</td>
<td>&lt;1</td>
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<tr>
<td>Thermophilic anaerobic spores</td>
<td>CFU/g</td>
<td>1100</td>
<td>&lt;3</td>
</tr>
<tr>
<td>Total thermophilic aerobic spores</td>
<td>CFU/g</td>
<td>6167</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Total flat sour spores</td>
<td>CFU/g</td>
<td>2802</td>
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</table>

The level of irradiation was less than 2.5 Mrads. The lower limit of detection for Total Aerobic Plate, Total Yeast, Total Mold, Mesophilic Aerobic Spores, Total Thermophilic Aerobic Spores and Total Flat Sour Spores is less than one colony forming unit per gram (CFU/g).

The lower limit of detection for Total Mesophilic Anaerobic Spores and Thermophilic Anaerobic Spores is less than three most probable number per gram (MPN/g).

The data above shows a typical microbiological profile of an animal feed before and after irradiation. While there is microbial contamination in the feed before irradiation, no aerobic bacteria, yeast, mold or spores were found at a detection level of 1 organism per gram (or 3 per gram in the case of mesophilic and thermophilic anaerobic spores) in the feed after irradiation.

Absolute sterility is difficult to define. However, PicoLab® products are guaranteed to contain less than 10 organisms per gram of total aerobic bacteria, yeast, molds, and thermophilic aerobic and thermophilic anaerobic spores.

#### Vitamin Assays

- **Vitamin A**: 94%
- **Vitamin D**: 91%
- **Vitamin E**: 100%
- **Thiamin**: 100%
- **Riboflavin**: 100%
- **Pantothenic Acid**: 100%
- **Vitamin B₁₂**: 92%

#### Microbiological Assays

- **Total aerobic plate**: <1 CFU/g
- **Total yeast**: <1 CFU/g
- **Total mold**: <1 CFU/g
- **Total mesophilic anaerobic spores**: <3 MPN/g
- **Mesophilic aerobic spores**: <1 CFU/g
- **Thermophilic anaerobic spores**: <3 MPN/g
- **Total thermophilic aerobic spores**: <1 CFU/g
- **Total flat sour spores**: <1 CFU/g
Researched and developed by Purina, LabDiet® PicoLab® products were introduced in 1984 as the first research animal diets treated with irradiation. In 1996, the IsoPro® product range was added, providing researchers a wider selection of diets to choose. PicoLab® and IsoPro® undergo an irradiation treatment process which assures you of reliable microbial control and virtually bacteria-free, sanitized diets.

**Packing**

PicoLab® and IsoPro® products are packaged in exclusive 4-ply bags with removable pop-out durable inner pouches. Simply follow the on-bag instructions to remove the inner bag. This special packaging assures that the diets arrive in your lab in the same virtually bacteria-free condition achieved when irradiated and shipped from our production facility. The removable pop-out pouch design allows you to disinfect the package before taking it into animal rooms.

Pico-Vac®

Pico-Vac® diets offer the same advantages of irradiation as the standard PicoLab® and IsoPro® diets, but are vacuum-packed in 5-pound plastic bags. The unbroken vacuum seal is an additional assurance of the integrity of the package. The package can be dipped or sprayed for disinfecting, and the 5-pound size is convenient for use in laminar flow hoods.

**Confidence**

**Reducing your research risk**

Each PicoLab®, IsoPro® and Pico-Vac® diet product provides the LabDiet® managed formulation process that assures Constant Nutrition® for your animals. These, and all LabDiet® products are manufactured and packaged with extreme care in our ISO 9001:2000 plant in Richmond, Indiana.

**Helping to speed your research process**

By combining our nutritional expertise with irradiation technology, we've produced a complete irradiated product line to meet all of your sanitized feed needs. Irradiated diets save handling time and are ready-to-use when they arrive at your facility.

**WHAT IS IRRADIATION AND WHAT DOES IRRADIATION DO?**

- Irradiation is ‘Energy’ that moves through space in invisible waves.
- Irradiation extends shelf life of food by removing bacteria and mold spores.
- Irradiation does not affect the palatability of animal diets.
- Irradiation provides batch to batch nutrient stability.
- Irradiated diets are easy to handle, typically requiring less labor at the research facility level.

**Benefits of Using PicoLab®, IsoPro® and Pico-Vac® Irradiated Diets**

- Irradiation causes minimal nutritional damage to the formulated product.
- Irradiation extends shelf life of feed by removing bacteria and mold spores.
- Irradiation does not affect the palatability of animal diets.
- Irradiation provides batch to batch nutrient stability.
- Irradiated diets are easy to handle, typically requiring less labor at the research facility level.

**Summary of Irradiated Rodent Diets**

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<td>Pico-Vac®</td>
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<td>High Energy</td>
<td>Mice</td>
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**Product Code**

- M = Mouse
- M = Mouse
- M = Mouse
- M = Mouse
- M = Mouse
- M = Mouse
- C = Cylinder Pellet
- O = Oval Pellet
- M = Meal (ground pellets)
- V = Vacuum packaged
- L = Package Size

**NUTRIENTS**

- Protein, %
- Fat, ether extr., %
- Fat, acid hydrolys.
- Crude fiber, %
- Ash, %
- NFE, %
- Lysine, %
- Cysteine, %
- Methionine, %
- Threonine, %
- Methionine, %
- Cysteine, %
- Methionine, %
- Threonine, %
- Methionine, %
- Cysteine, %
- Methionine, %
- Threonine, %
- Methionine, %
- Cysteine, %
- Methionine, %
- Threonine, %
- Methionine, %
- Cysteine, %
- Methionine, %
- Threonine, %
- Metabolizable energy, kcal/g

**Purina® Nutrition®** for your animals. These, and all LabDiet® products are manufactured and packaged with extreme care in our ISO 9001:2000 plant in Richmond, Indiana.