Urban Farming: Growing Quality Microgreens and Produce Locally

Case Study: Black Pearl Gardens
The opportunity:
Provide fresh, high quality microgreens, edible flowers and mini vegetables to local chefs and groceries year round in the Ann Arbor, MI region.

The challenge:
An unfavorable climate precludes outdoor or greenhouse growing of delicate edible plants. Indoor growing was formerly impractical for lack of efficient and effective sole source grow lighting.

The solution:
TotalGrow™ Broad Grow Spectrum Light bulbs provide a custom-tailored light output that supports complete plant function while emphasizing the key regions for growth and plant quality.

The results:
- 50% more crop turns and 25% energy reduction compared to fluorescent alternatives tested.
- Sustainable, cost effective, high quality fresh produce satisfying a growing customer base.
- Contains no mercury: a potential neurotoxin and hazardous material.

From the grower:
“TotalGrow™ Broad Grow Spectrum Light bulbs, or the ‘magic bulbs’ as I call them, have allowed me to grow extremely high quality herbs and microgreens in my basement without any sunlight at all. I have experienced a faster grow cycle with these bulbs and have none of the problems that I had with the fluorescent bulbs I used in the past. These lights have allowed me to expand my business beyond my original customers and support some larger demand customers.”

- Christy Kaledas, Restaurant Gardener / Garden Manager
The setup:

- Common wire shelving units with plant flats to create standard 48 x 45 inch grow surfaces.
- 12 TG1A Broad Grow Spectrum Light bulbs per shelving tier in standard E26 light sockets.
- 100-120 µmole/m²/s light intensity.
- Reflective walls to maximize light usage.
- Height: Approximately 10 inches above plants.
- Light Spacing: 15 inches x 15 inches.
- Dark room germination.

50% more crop turns and 25% less electricity than under T5 fluorescent lights!

“I boxed the T5s up and never used them again after receiving your TotalGrow™ lights. I truly am completely satisfied with the lights and the service all of you have provided.”

TotalGrow™ Broad Grow Spectrum lights provide a broad spectrum of light in all of the wavelengths plants need most for quick and healthy growth.

- Abundant red light drives efficient growth.
- Ample blue light is critical for vibrant growth.
- Sufficient green and far red light supports complete plant health and vigor.
- The full spectrum also creates a pleasant working environment that reveals the vibrancy of plants.
In 2014, Christy Kaledas received the opportunity to begin her dream job of “growing fresh organic vegetables and doing something good for the community.” As restaurant gardener and garden manager she is supplying the highest quality produce for area restaurants, grocery stores and a local farm store while maintaining the presence she desires at home with her children.

**Item** | **TG1A**
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Product Type | Light Bulb (E26)
Power Consumption | 11W
Projected Service Life | 50,000 hours
Output Efficiency | 1.3 µmole/J

**Grower**
Black Pearl Gardens, LLC

**Location**
Ann Arbor, MI, USA

**Crop**
Microgreens (cilantro, basil, kale, amaranth, broccoli, mustard, carrot, cress, wasabi, arugula, etc.), mini vegetables (carrots and radishes) and edible flowers

**Lights Tested**
TotalGrow™ TG1A Broad Grow Spectrum Light bulbs and T5 fluorescent lights

**Results**
- High quality, fresh, year-round produce
- 50% more crop turns and 25% less electricity than under fluorescent lights
- Low maintenance, high reliability & consistency, no hazardous materials (Hg) or breakable glass