LIGHTING SYSTEM IMPROVEMENT

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service—Practice Code 670

System Input Watts per Luminaire	System Luminous Efficacy, lumens per watt	Lamp life @ 10-12 hr starts	Weekly Hours of Operation: Annual kWh	Hours of Operation/15 yrs	kWh in 15 yrs	N c
			40			
58	98	30,000	121	31,200	1,810	
88	98	30,000	183	31,200	2,746	
50.5	69	50,000	420	31,200	6,302	
			70			

LIGHTING SYSTEM IMPROVEMENT

Lighting System Improvement is applied as part of a conservation management system to reduce energy use. The practice entails implementing improvements to an existing lighting system to increase energy efficiency measures which reduce on-farm energy use. Improvements may include complete replacement or retrofitting of one or more components of the existing agricultural lighting system.

PRACTICE INFORMATION

Lighting System Improvement is used exclusively to implement recommendations of a lighting assessment that complies with the guidelines for a Type II on-farm energy audit performed in accordance with the American Society of Agricultural and Biological Engineers ANSI/ASABE Standard S 612, Performing On-farm Energy Audits. The practice applies to any agricultural facility with an existing lighting system.

Replacement or retrofit system and related components or devices must meet or exceed light levels, light uniformity and light quality recommended for the tasks performed in accordance with ANSI/ASABE recommendations. Electrical wiring, mounting and connections must meet the National Electrical Code for Agricultural Buildings.

Lamps and ballasts must be compatible. Lamps or lamp/ballast combinations must meet a minimum rated efficiency. Where exposed to excessive dust or corrosive atmosphere, light fixtures must be non-corrosive and water resistant to protect lamps. When automatic controls are used, they must meet their intended purpose, be compatible with the lights used, and be installed with an independent manual override.

The practice standard includes provisions for placement of lights to ensure animal safety and welfare.

When implementing Lighting System Improvement, consider the impact of lighting modifications on plant and animal production and heating, cooling or ventilation requirements. Consider utilizing daylight to supplement artificial light, and consider how direction and intensity of outdoor lights may affect light pollution.

OPERATION AND MAINTENANCE

Operation and maintenance instructions for this practice shall include regular inspection of lamps, ballasts, fixtures, wiring and controls. Burned out lamps must be promptly replaced and other repairs promptly implemented as needed. In addition, lamps, fixtures and rooms surfaces are to be regularly cleaned to ensure a high-quality light environment.

For further information, refer to the practice standard in the local Field Office Technical Guide and associated job sheets and specification.

Lighting System Improvement- 670

08/2012