



ECONOMIC RISK ANALYSIS

UTAH AND THE JAPANESE BEETLE ON TURF AND CORN

By [Sarah Jane Grundon](#) and [Hudson Schmucker](#)

Benefit of Corn


Estimated Damages for 2027		
Best Case Scenario 6 Bushels	Most Likely Scenario 8 Bushels	Worst Case Scenario 10 Bushels*
269,683 bushels	359,577 bushels	449,472 bushels
\$1,213,574	\$1,618,098	\$2,022,623

*Base of 10 bushels per acre (Gould, 1963)


Benefit of Turf

Estimated Damages for 2027		
Best Case Scenario 20% Damage	Most Likely Scenario 35% Damage	Worst Case Scenario 50% Damage
181,242,329 Sq. Ft	341,673,699 Sq. Ft	502,105,070 Sq. Ft
\$124,604,101	\$234,900,668	\$345,197,235

Aggregate Cost-Benefit Analysis of Japanese Beetle on Turf and Corn in Utah



Benefit	2027
Corn Yield / Revenues Saved	\$1,618,098.04
Savings of replacement for turf based on total possible turf in Urban areas in Utah (Based on 20% damage)	\$124,604,101.12
TOTAL	\$126,222,199.17



Cost	2019	2027
Overall Estimated Cost to Quarantine (Government cost to trap beetles, Government cost of insecticides, etc.)	\$60,000.00	\$480,000.00
TOTAL		\$(480,000.00)

Forecasted Projections

Our forecasted projections suggest the accumulated costs of maintaining the quarantine is less than 1% of the potential losses to Utah Agriculture. Based on our findings, we recommend that the Utah Department of Agriculture and Food continues to maintain the quarantine against the Japanese Beetle.

Our findings suggest the benefit to Utah's agriculture by maintaining quarantine is greater than the cost to quarantine the Japanese beetle at an estimated cost-benefit of \$480,000-\$126,222,199 in 2027.

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