



Sustainability Best Practices for the Mango Industry

Best practices are steps that industry members can take to help lessen their sustainability impact. The NMB partnered with Common Fields, a sustainability consulting service, on a research effort to help determine best practices for the mango industry.

CARBON FOOTPRINT

- **Ship only full loads to reduce transportation emissions.** Trucks going to the border should be full of fruit, and companies could partner with other commodity industries to ensure that trucks returning from the border are also full.
- **Employ third-party trucking companies with fleets that have the best fuel efficiency.**
- **Regularly maintain vehicles, and acquire fuel-efficient fleets.**
- **Change irrigation methods to drip and dispersion from flood or higher water intensity methods to reduce greenhouse gas emissions from pumping machinery.**
- **Use photovoltaic cells as a source of renewable energy in production operations to cut down on electricity use.**
- **Partition cool rooms at packinghouses so that only the sections that contain produce would be cooled** (instead of cooling the entire room) to reduce electricity needs.

OTHER SUSTAINABILITY FACTORS

PRODUCT INTEGRITY

Product integrity with regard to sustainability tracks things like worker hygiene, the industry's food safety record, consistent product quality, and good agricultural practices. Companies and industries with top-notch product integrity are viewed as good stewards of the environment.

- **Focus on eliminating waste in the value chain by maintaining a low rejection rate from packing through retail.**
- **All facilities across the mango supply chain should create and use standard operating procedures that will align their operations with accepted good agricultural practices.**

ENVIRONMENTAL

Environmental sustainability in the mango industry measures inputs like water, materials, and fuels, and calculates production outputs like solid waste, electricity use, and emissions. Efficient use of these resources can mean improved environmental performance and reduced operating costs. Good business and good environmental performance go hand in hand.

- **Switch from flood irrigation to micro spray irrigation to reduce water inputs and use less electricity.**
- **Minimize electricity by using automatic controls and scheduling.**

- Strive to use third-party transportation companies that mandate fuel efficiency standards.
- Change solid waste management from a “linear” process (materials going into a landfill) to a “closed loop process” (recycling or reusing all waste generated).
- Embrace basic efficiencies in cold room design to help minimize fuel use.
- Utilize natural lighting (skylights) in packing facilities during daytime hours.
- Install seals between loading bay doors and trailer openings to reduce the amount of cooled air that is lost due to leakage when loading bay doors are open.

BIODIVERSITY AND ECOLOGY

*Sustainability with regard to **biodiversity and ecology** in the mango industry focuses on issues like habitat protection, balancing production with conservation efforts, protecting native vegetation and wildlife, pest control, and managing soil. Industries that embrace continued natural biodiversity in the regions where they raise their crops show that they are forward-thinking in their approaches, and indicate that they have a long-term view of the success of their industry.*

- Develop a biodiversity and habitat conservation plan, and ensure it is followed and verified.
- Educate growers about the landscape impacts of mango farming, emphasizing wildlife-friendly practices.
- Implement natural buffer zones approximately 5 meters in width lining all borders of orchards, including fence lines and waterways, that connect native vegetation patches inside and outside the orchard.
- Conserve between 20% and 30% of the native vegetation within a mango orchard.
- Reuse organic waste by recycling it back into the soil.
- Plant permanent ground cover to help create balanced soil that could aid production and reduce the costs of management.
- Use integrated pest management to control pests, using biological agents, native species, and chemical solutions to specifically target pests.
- Consider using cattle to promote the natural cycling of nutrients.
- Preserve native pollinators (like bees) by conserving their habitat within and outside mango orchards.

SOCIAL

*In the mango industry, **social sustainability** can be monitored through things like the size of the workforce, worker productivity and turnover rates, wages paid, healthcare provisions, and job safety programs. Social sustainability considers how business operations affect the world at large – employees, employee families, communities, suppliers, investors, and consumers.*

- Pay employees wages that exceed the “local living wage.”
- Ensure that all eligible employees are registered with Social Security upon employment, and pay their premiums on employees’ behalf.
- Encourage union membership for employees and work collaboratively with unions to make sure there’s an equitable balance between employer and employee needs.
- Establish standardized safety operating procedures.