Mississippi State University
Notice of Proposed Sole Source Purchase

256-076

Mississippi State University anticipates purchasing the item(s) listed below as a sole source purchase. Anyone objecting to this purchase shall follow the procedures outlined below.

1. **Commodity or commodities to be purchased (make, model, description):**

Custom-built research plot sprayer manufactured by R&D Sprayers, designed for attachment to a sub-compact tractor. The unit includes multi-tank/bottle configurations, adjustable boom systems, and precision application components to support small-plot agricultural research.

2. **Explanation of the need to be fulfilled by this item(s), how is it unique from all other options, and why it is the only one that can meet the specific needs of the department:**

This equipment is a custom-built research plot sprayer designed for attachment to a sub-compact tractor and tailored to meet the needs of the vegetable Extension program. It will be used to apply pesticides to vegetable research plots. This sprayer differs significantly from commercially available options, which are primarily designed for large-scale agricultural use. Standard systems typically rely on large tanks and pump-driven delivery, which are not suitable for research applications requiring precise, small-volume applications and strict avoidance of cross-contamination. This system instead utilizes pressurized gas to deliver solutions, minimizing contamination risk between treatments. The design includes multiple independent application systems, including capacity for up to eight 2-liter bottles to allow multiple treatments in a single pass, as well as additional larger tanks (3–15 gallons) for broader applications. It is equipped with adjustable and offset boom configurations to accommodate both wide-row crops (up to approximately 12 feet) and smaller plots or enclosed spaces such as high tunnels. Each boom is subdivided into independently supplied sections, allowing different treatments to be applied in sequence without cross-contamination. The system also includes adjustable height settings to accommodate varying crop sizes, from bare ground applications to taller crops such as sweet corn. These combined features are not available in standard market equipment and are necessary to meet the specific research and Extension needs of the department.

3. **Name of company/individual selling the item and why that source is the only possible source that can provide the required item(s):**

R&D Sprayers specializes in the design and manufacture of research-specific spraying equipment and serves a wide range of land-grant universities and research institutions across the United States. Their systems are already in use at Mississippi State University and other major institutions, demonstrating reliability and suitability for research applications. Due to the highly specialized nature of research plot sprayers and the need for customized configurations, R&D Sprayers is the only known vendor capable of delivering a system that meets all required specifications for this application.

4. **Estimated cost of item(s) and an explanation why the amount to be expended is considered reasonable:**

The estimated cost is $13,364.55 to build this sprayer. This is a reasonable amount considering that hand help research backpack sprayer that can be used for spraying one bottle at a time costs between $1000 and $1500, and don't allow spraying large plots that are 12 ft wide. Because of the proximity of this company, there are no shipping cost.

5. **Explanation of the efforts taken by the department to determine this is the only source and the efforts used to obtain the best possible price:**

R&D Sprayers are widely utilized by researchers conducting small-plot agricultural studies requiring precise application of pesticides and fertilizers. They have an established reputation for reliability and are commonly used across research institutions. Despite this, efforts were made to identify alternative vendors capable of providing a comparable system. Several manufacturers of research sprayers were evaluated; however, none were able to meet the specific requirements of the vegetable research program. Some available systems are self-propelled units, which are significantly more expensive and not compatible with the spatial constraints of high tunnels. Other options rely on pump-based delivery systems, which increase the likelihood of cross-contamination between treatments and are not suitable for multi-treatment precision applications. Additionally, certain designs utilize larger tank systems rather than smaller interchangeable bottles, limiting their effectiveness for small-plot research. In some cases, vendors are located outside the United States, resulting in increased costs and logistical challenges. Based on this review, no alternative vendor was identified that could provide a system with the required specifications, functionality, and cost efficiency. R&D Sprayers remains the only viable source for this equipment.

Any person or entity that objects and proposes that the commodity listed is not sole source and can be provided by another person or entity shall submit a written notice to:

Jennifer Mayfield, CPPO
Director of Procurement Services, Chief Procurement Officer
jmayfield@procurement.msstate.edu
Subject Line must read “Sole Source Objection”

The notice shall contain a detailed explanation of why the commodity is not a sole source procurement. Appropriate documentation shall also be submitted if applicable.

If after a review of the submitted notice and documents, MSU determines that the commodity in the proposed sole source request can be provided by another person or entity, then MSU will withdraw the sole source request publication from the procurement portal website and submit the procurement of the commodity to an advertised competitive bid or selection process.

If MSU determines after review that there is only one (1) source for the required commodity, then MSU will appeal to the Public Procurement Review Board. MSU will have the burden of proving that the commodity is only provided by one (1) source.

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