ABSTRACT. Many used tractors that are imported from Japan are adding to the current national inventory in the U.S. and Canada of farm tractors that lack a rollover protective structure (ROPS). Gray-market tractors are built for use by the manufacturer for a certain country but are imported against the manufacturer’s wishes to a second country for use there, usually as a used tractor. Gray-market tractors may lack ROPS and seatbelts, depending on the date of manufacturer. The objective of this investigation is to describe the gray market for tractors imported from Japan into the U.S. and the policy implications regarding the hazards associated with these imports. Operator manuals and warning labels are typically not written in English. Foreign manufacturers that market tractors in the U.S. have established a variety of disincentives for the importation of gray-market tractors, including issuing warnings, not servicing or providing parts for these tractors, and banning their importation through actions by the U.S. International Trade Commission. Nonetheless, a U.S. market has developed that imports and provides services and parts for gray-market tractors, and some companies provide certified ROPS on the tractors that they sell. A product safety perspective and related policies are presented as an approach to ensuring that these imports are equipped with ROPS and seatbelts.

Keywords. Gray market, Grey market, Hazards, Policy, ROPS, Tractors.

America’s first compact tractor was D. M. Hartsough’s Little Bull, with one rear drive wheel. The Little Bull tended to overturn sideways when the drive wheel was on the downhill side (Leffingwell, 2000, p. 139). To counter the overturn, Hartsough patented the first rollover protection device in 1915 (fig. 1). “Numerous” rear overturns of tractors began in 1917 with the introduction of the Fordson tractor (Skromme, 1986). Over the 50-year period prior to 1971, an estimated 30,000 operators were crushed under overturned tractors in the U.S. (Arndt, 1971). ASAE recognized rollover protective structures (ROPS) for farm tractor operators as a Historic Landmark of Agricultural Engineering in 1986. This recognition was extended to four parties. One was to researchers at the University of California at Davis, who reported on successful tests of a ROPS design in 1956. Another was Warren I. Hanson of the North Dakota Highway Department, who initiated a program for equipping tractors used for roadside mowing with ROPS in 1959 and equipped all 190 of the department’s tractors with ROPS in the following year. ASAE recognized Wesley F. Buchele for convening the first ROPS Symposium at the ASAE Winter Meeting in 1962. ASAE recognized engineers at Deere &
Company for developing a commercial ROPS with a two-post design, named the “Roll-Guard,” and seat belts in 1966 (Skromme, 1986). ROPS are proven lifesavers in the event of a tractor overturn (Reynolds and Groves, 2000), yet nearly half of the tractors used on farms in the U.S. lack this protection (Hard and Myers, 2011).

The aim of a National Institute for Occupational Safety and Health (NIOSH) National Agricultural Tractor Safety Initiative was to increase the number of older tractors that have a ROPS and seatbelt installed and recommend consideration of mandatory ROPS on all tractors (Swensen, 2004). This initiative also identified an emerging issue: the importation of “gray-market” tractors from foreign manufacturers that do not meet safety standards, particularly the lack of ROPS. A gray-market tractor is built for use in one country but is imported for use in another country against the manufacturer’s original intent (Myers and Purschwitz, 2011). These gray-market tractors have become prevalent in the U.S., and most lack ROPS (Purschwitz, 2008).

A three-year project, “Developing a Smart-ROPS Decision Making Guide,” was completed in 2008 that aimed to overcome a major barrier to farmers and other owners of agricultural tractors for retrofitting their tractors with ROPS. This project resulted in “The Kentucky ROPS Guide,” a national database of available ROPS retrofits in the U.S. (Purschwitz, 2008). In developing this guide, a growing problem was discovered: the increasing number of older, gray-market, non-ROPS tractors. Of 1,026 tractor makes and models identified in the project, 311 (30%) were small Asian tractors (compact utility tractors), which are imported in increasing numbers. Of these imports, 230 (22% of the total) were gray-market tractors, as shown in figure 2.

Figure 1. U.S. Patent No. 1,138,610 (Source: Hartsough, 1915).

Figure 2. Proportion of gray-market tractor models identified for ROPS retrofits in the U.S. in 2008 ($n = 1,026$).
Unintended Consequences from Japan

Gray-market tractors are nearly all imported from Japan, but they predate a 1991 Japanese requirement for ROPS on new tractors. Because of air pollution controls in Japan, older tractors have been banned. The Japanese government passed a law that went into effect in October 2003 that required drastic reductions in emissions from diesel-powered vehicles. Even tougher regulations went into effect in 2008 that limit the amount of nitrogen oxide and particulate matter emitted by diesel engines. In effect, Japan established incentives to buy new tractors by outlawing older tractors that do not meet the air pollution standards.

The Japanese policy produced hundreds of unwanted tractors. This surplus of used tractors could be exported at a profit, and a market for these tractors emerged in Australia, Canada, and the U.S. A shipping container can hold 16 to 18 used tractors at a cost equivalent to just three to four new tractors, including the purchase price and shipping costs. According to internet blogs, gray-market tractors arrive by the “thousands” in the U.S. in such shipping containers. These small tractors are inexpensive, e.g., $3,000 or less, and they consistently lack ROPS. This flood of used tractors adds to the already large number of tractors that lack ROPS in the U.S., which decreased from 62% in 1993 to 41% in 2006 (Hard and Myers, 2011).

These gray-market tractors are attractive to a growing segment of rural landowners who do not farm but have some acreage and find these used imports to be an inexpensive alternative to tractors produced by major manufacturers for the U.S. market (Myers, 2011). How and by whom a gray-market tractor will be used is indistinguishable among production farmers, hobby farmers, and other users. Indeed, the movement of gray-market tractors in the U.S. market is fluid between farming and non-farming or recreational uses.

Japanese makes that have been imported into the U.S. as gray-market tractors include Yanmar, Mitsubishi, Iseki, Shibaura, Hinomoto, Satoh, Suzue, Zen-Noh, and Kubota. Kubota gray-market tractors imported from Japan sold for 65% to 90% less than new Kubota tractors in the U.S. (Barry, 2001). However, used Kubota tractors are no longer imported into the U.S., which we will address later (Best Used Tractors, 2010a, 2010b).

The purpose of this article is to describe the gray market for tractors imported from Japan, with a focus on rollover protection, and to describe the policy implications regarding the hazards associated with these imports.

The Gray Market

The tractor life cycle follows a path from design and manufacturing to marketing and sales. Typically, a dealer acquires the tractor for sale to the public. A customer purchases the tractor, places it into operation, and eventually either scraps the tractor or sells it to someone else (fig. 3). The life cycle of a gray-market tractor is similar to that shown in figure 3; however, when the customer disposes of the tractor, the path becomes exotic, as shown in figure 4. An exporter purchases the used tractor and ships it to another country. Typically, the exporter sells the tractor to a used tractor dealer, who markets the tractor to the public. The sale may be made directly to a customer or through an intermediary.
Compact Tractors in Japan

A major driving force for tractor sales in Japan is a cooperative that includes 4.5 million farmers and employees, ranking as the largest cooperative in the world. This cooperative is called Zen-Noh, which translates as “all farmers.” Zen-Noh contracts with other companies to manufacture much of its equipment, including tractors. Because of the high volume of tractors purchased by Zen-Noh from Japanese companies, Zen-Noh receives attractive pricing and leasing breaks. Zen-Noh has also had its brand placed on these tractors, rather than the manufacturer’s name. For example, Kubota has manufactured hundreds of thousands of compact tractors for Zen-Noh with the Zen-Noh brand name. For Zen-Noh, Kubota adds the letter “Z” to the front of the model number.

In 1969, Kubota started exporting 21 hp tractors into the U.S. with great success (Orange Tractor Talks, 2009). The compact diesel tractors shipped to the U.S. have included not only used Kubota tractors but also Mitsubishi, Yanmar, Iseki, Hinomoto, Suzue, and Shibaura tractors. Most Japanese tractor manufacturers that now represent the gray market have long histories of producing compact tractors for U.S. companies, which then sell and service the tractors under their own names:

- Between 1977 and 1986, Yanmar produced 100,000 John Deere compact tractors for the U.S. market and produced its own line of small tractors for the U.S. market under the Yanmar name until 1989. Starting in 2007, Yanmar partnered with Cub Cadet to make compact tractors of up to 50 hp for the U.S. market.
- Mitsubishi makes small Case-IH tractors.
- Iseki built White, Bolens, and Massey Ferguson tractors.
- Hinomoto built Allis Chalmers and Massey Ferguson compact tractors.
- Shibaura has made Ford/New Holland compact tractors.

When these tractors are manufactured and marketed in Japan, with the brand name of the manufacturer, and then exported as used tractors to the U.S., they become gray-market products. Furthermore, some non-gray-market manufacturers of front-end loaders, e.g., Koyker, are marketing their products for the gray market, even though front-end loaders add to the tractors’ instability.

The Safety Problem

A product safety perspective is needed regarding rollover protection, rather than the traditional occupational safety perspective, which is limited to protecting employees. The occupational safety perspective omits more than 80% of farmers and many residential or avocational farmers who use a tractor on small acreages, whereas the product safety perspective captures this population at risk. Moreover, this population falls to the temptation of purchasing gray-market tractors because of their utility and low cost.

Because of these safety issues, and to protect the Yanmar trademark and reputation, in 2005 Yanmar Diesel America Corporation issued an “important safety notice” stating...
that Yanmar would not support gray-market Yanmar brand tractors, including supplying replacement parts for these units. Yanmar’s safety notice included the following statements (Pott, 2012). This notice also appeared at an earlier date on eBay from Yanmar America, dated 2 February 2005 and designated YanA-029 (http://cgi3.msn.ebay.com/ws/eBayISAPI.dll?ViewUserPage&userid=rhr823):

- “Rollover protective structures (ROPS) and a seatbelt, certified to U.S. standards, which are recommended or required for tractors in the U.S. market, are not available for gray-market tractors. A tractor without ROPS and a seatbelt will, under many circumstances, afford the operator less protection in a rollover accident than a tractor with certified ROPS and a fastened seatbelt.”

- “Power take-off (PTO) master shields and guards, required on tractors for the U.S. market, are not normally installed on gray-market tractors. These devices are intended to protect from injury due to inadvertent contact with the rotating PTO shaft.”

- “Gray-market tractors generally do not have an over-running clutch on the PTO, whereas tractors designed for the U.S. market generally do. When a gray-market tractor without such feature is used with a large rotary implement, it is possible for the tractor to continue moving even when the brakes are applied. Such implements are common in the U.S., but not in Japan.” (This warning does not address the possibility of the tractor continuing to move after the clutch is disengaged because the implement’s motion continues to deliver power to the tractor’s rear axle, which occurred on older Ford tractors.)

- “Some gray-market tractors are not equipped with a safety start switch. This safety feature is designed to prevent the tractor from starting in gear and potentially striking or running over an operator who misuses the tractor by starting it from the ground instead of from the operator’s seat as per Yanmar’s instructions.”

- “Pulling on the throttle of a gray-market tractor will cause it to accelerate, whereas pulling on the throttle of a tractor designed for the U.S. market will cause it to decelerate. This difference can have potential safety consequences for an unsuspecting operator.”

- “Gray-market tractors have multiple PTO speeds for operating implements, whereas tractors designed for the U.S. market generally have one PTO speed, namely, 540 revolutions per minute (rpm). If a gray-market tractor is used with an implement designed for the U.S. market, the implement can be operated at revolution speeds in excess of its 540 rpm design speed, potentially leading to catastrophic failure of the implement and associated injury.” An additional statement reads: "Tractors designed for the U.S. market have been equipped with rated PTO speeds of 540 rpm, 1000 rpm, or both, for decades. The two speeds use shafts with different splines to prevent mismatches (six splines for 540 rpm, 20 or 21 splines for 1000 rpm). Japanese gray-market tractors are designed to accommodate rear-mounted rotary tillers and use shiftable tractor PTO gearing for changing the rotary tiller speed as desired. They typically have a conventional six-spline, 1-3/8”, 540 rpm PTO stub shaft on the back of the tractor, but depending on the tractor, that same shaft may be shifted to speeds varying from 540 rpm to 1200 rpm or more, for the purpose of changing the speed of the rotary tiller. Attaching a U.S. implement designed for 540 rpm (max) to such a PTO and then shifting the tractor to higher PTO speeds could easily result in catastrophic failure."
• “Operator manuals for gray-market tractors were written in the Japanese language and are not available from Yanmar in the English language.”
• “Warning decals for gray-market tractors were written in the Japanese language and are not available from Yanmar in the English language.”

Conversely, Best-Used-Tractors (2010) argues six points for the viability of gray-market tractors sold in the U.S. First, Best-Used-Tractors claims that most gray-market Japanese tractor parts are interchangeable with their counterpart domestic models. Second, there are sources across the U.S. for gray-market tractor parts, although tractor owners may be unaware of them. Third, mechanics already work on Japanese tractors and are familiar with most of the domestic versions of the same parts. Fourth, standard PTO shafts are typical, with a few that run in reverse, and PTO adapters are available for coupling implements with different numbers of splines onto standard PTO shafts. Fifth, most imported Japanese tractors have three-point hitches; a few have two-point hitches, but three-point hitch retrofit kits are available. Sixth, while most gray-market tractors are sold without ROPS, Best-Used-Tractors claims that tractor buyers are responsible for installing ROPS. This source also claims that, while many gray-market tractors are imported without PTO shields, PTO shields are easy to fabricate. In addition, while gray-market tractors have Japanese-language safety labels and decals, Best-Used-Tractors reports that there are sources in the U.S. for English-language equivalents.

Protecting Good Will

Examples of overturn incidents involving imported tractors for which litigation was recorded follow, although some settlements that resulted are unknown at the time of this writing:

• Although not in the gray market, an imported Kubota B-7100 flipped onto and killed a 67-year-old retired farmer in 1990. When this tractor nearly overturned on his son, his widow sued, citing the lack of a ROPS on the tractor. A $10 million settlement resulted (Henderson, 2008).
• A Yanmar tractor overturned in 1995, killing its driver. Family members sued, claiming a violation of the Texas Deceptive Trade Practices Act because the sale failed to represent the tractor’s propensity to overturn when carrying dirt with its bucket extended and failed to provide a ROPS on the tractor (Tinsley, 1997).
• A gray-market Yanmar tractor overturned in 2000 and killed a man. His wife sued for wrongful death (Smith v. Yanmar, 2003).
• Regarding a man’s death in California involving a gray-market tractor overturn, the widow’s attorney asserted that Yanmar USA had refused to support gray-market tractors, were profiting from them, and allowed their licensed Yanmar parts dealers to support gray-market tractors (TractorByNet, 2004).
• A case in Mobile, Alabama, involved a Yanmar tractor manufactured in Japan in 1974. The driver was killed in a rear overturn in 2003 (Johnson v. Yanmar, 2010).

In 1996, Kubota was feeling the competition from gray-market imports (Orange Tractor Talks, 2009). With safety at the base of it argument, Kubota filed an action in 1996 with the U.S. International Trade Commission (ITC) to stop the importation, distribution, and sale in the U.S. of gray-market used Kubota tractors, which were designed for original sale in the Japanese market (Shepard, 1996). Kubota Corporation (the manufacturer, based in Osaka, Japan) and two U.S. subsidiaries, Kubota Tractor Corporation (the dis-
tributor and seller in the U.S.) and Kubota Manufacturing of America Corporation (the manufacturer of implements for Kubota tractors and Kubota lawn tractors), filed the action.

The Kubota strategy was to ban the importation of used gray-market tractors from Japan on the grounds that this action represented an infringement on its trademark in the U.S. The foundation for this strategy is stated by McDermott (1986): “the central purpose of trademarks is said to protect the manufacturer from unfair competition through the infringement of his mark and the resulting unauthorized use of his good will.” Kubota makes tractors for its domestic market in Japan as well as for the U.S. Through an ITC ruling, the company was successful in banning the importation of gray-market tractors of 50 hp or less based on trademark infringement. Such rulings are not unique. John Deere successfully banned the importation of harvesters made solely for sale in Europe by claiming a material difference between harvesters marketed in the U.S. and in Europe, including differences in warning labels and safety decals (Bourdeau Bros., Inc. v. International Trade Commission), especially regarding language differences (Mendelsohn and Stanton, 2010).

The ITC protects U.S. trademark holders from gray-market products that challenge trademarks because of lower quality, differences in consumer expectations, and the goodwill of the trademark owner. The inferior safety of the products risks the goodwill of the trademark owner (Gardner, 2010). In 1999, the U.S. Circuit Court of Appeals reviewed an ITC exclusion order against a Japanese importer that resold used Kubota tractors in the U.S. that were manufactured in Japan with the registered trademark “Kubota” (Gamut Trading Co. v. International Trade Commission). The court held that an importer that sold used tractors in the U.S. that were manufactured by Kubota for a Japanese market can infringe upon the Kubota trademark in the U.S., even though the imports were second-hand, and thus affirmed the ITC order (Barry, 2001; Samuels and Samuels, 2001).

Some importers elude import restrictions by bringing tractors into the country as spare parts. In one case, an importer temporarily received trademark recognition for the Zen-Noh brand. A Zen-Noh label replaced the Kubota label on tractors until Kubota was able to reverse this practice in the courts (Orange Tractor Talks, 2009). Both Kubota and Yanmar have manufactured tractors under the Zen-Noh brand.

Product Safety Strategies

Some states have enacted laws to protect tractor purchasers from product defects, but these so-called “lemon laws” apply only to new tractors and currently exist in only a few states (Beard and Centner, 1995). While no original manufacturer of gray-market tractors has adopted policies for providing ROPS on tractors imported into the U.S., other interventions need to be examined. Fundamentally, they bifurcate into either banning the importation of these tractors or retrofitting them with ROPS.

Policies to Ban Gray-Market Imports

Gray-market products are addressed by three statutes in the U.S. One is the Tariff Act of 1930, another is the Lanham Act that gives the ITC its authority, and last is the Clean Air Act. Another statute that has the potential for banning the importation of gray-market product is the Consumer Product Safety Act.
The Lanham Act

While black market goods are counterfeit and unlawful, gray-market products may be lawfully sold in the U.S. if they are identical to their U.S. equivalents. However, if gray-market products are materially different, then their importation may violate the Lanham Act, thus banning their sale in the U.S. For example, gray-market products are often sold at a discount and may not meet U.S. safety and/or environmental standards (Mendelsohn and Stanton, 2009).

Using this argument, Kubota Corporation and its affiliated U.S. companies sought an exclusion order against Gamut Trading Company, a Japanese importer. In the Kubota case, the ITC found material differences between Kubota’s new tractors and the gray-market Kubota tractors regarding structural strength, maximum speed, power take-off speed, etc. In addition, certain parts were unavailable in the U.S., service differed between the gray market and the U.S. models, and the gray-market models lacked English-language warning labels, instructions, and manuals. The ITC issued a general exclusion order against the importation of all used Kubota tractors bearing the Kubota trademark manufactured in Japan for resale in the U.S. (Samuels and Samuels, 2001).

The Tariff Act

Under the Tariff Act, section 526, entitled “Merchandise Bearing American Trademark,” it is unlawful to import any merchandise of foreign manufacture if it bears a trademark owned by a citizen or by a corporation or association created or organized within the U.S. The Lanham Act defers to the Tariff Act but aims to remove deceit and confusion from the consumer because knowledge of material differences in the product affect the decision to buy the product as well as the goodwill of the trademark owner (Gardner, 2010).

Gamut Trading Company appealed the ITC ruling to the Federal Circuit Court for review of the determination under the Tariff Act. Gamut argued that the used tractors could be easily serviced. Gamut also argued that since it sells only used tractors and Kubota sells only new tractors, they are not in direct competition, and thus the used tractors cannot infringe on new products. The court affirmed the ITC action, adding that its decision did not turn on the ease of servicing used tractors and that products need not be competitive, only related. The court observed that a low threshold of materiality was applied, and that consumers would likely find the differences in the products significant (Samuels and Samuels, 2001). The court held that the lack of English “instructional labels and warning labels, operating manuals, and service manuals” was material. These documents “were necessary to the safe and effective operation of the machine” (Mendelsohn and Stanton, 2010).

Nonetheless, the issue is not settled. Barry (2001) observed that a manufacturer “should not be able to invoke trademark law to protect itself from the very situation it created and has power to correct.” He added that “such problems should be resolved in the boardroom of Kubota Japan, not in the courtroom.”

The Clean Air Act

Just as the source of the gray-market tractor problem in the U.S. is the air pollution law in Japan, the Clean Air Act in the U.S. has the potential for banning gray-market tractors from importation. In accordance with the Clean Air Act, the U.S. Environmental Protection Agency began regulating certain non-road diesel and gasoline engines, requiring that they meet federal emission standards beginning January 1, 1996. The non-road
category includes lawn and garden equipment, outdoor power equipment, recreational equipment, farm equipment, construction equipment, marine engines, and locomotives.

This regulation applies only to vehicles that were manufactured after the promulgation of the regulation. In general, reasons for exclusion include vehicle age (i.e., manufactured prior to the regulation), fuel type, maximum speed, exclusive use for competition or racing, or lack of features associated with practical street or highway use. However, in recent years, used mini-trucks and vans have been imported illegally from Japan. These vehicles, originally manufactured as road vehicles, are imported as non-road vehicles but exceed the 25 mph maximum speed, either as originally manufactured or with their speed governors removed, and thereby qualify as road vehicles. Similarly, the Clean Air Act could ban the importation of used tractors if the rules were extended to a time earlier than promulgation of the standard, and there would not be a 25 mph threshold.

**The Consumer Product Safety Act**

Based on a CPSC General Council determination in 1974, farm tractors are not excluded by the Consumer Product Safety Act. Further determination depends upon circumstances (Schoem, 1974), but there are barriers to overcome. While it is relatively easy to establish a non-ROPS tractor as a dangerous product, the greater challenge is to establish the tractor as a “consumer product” under the law and overcome the perception that the tractor was made for customers other than consumers. Specifically, compact utility tractors are designed for landscape and estate management operations (residential use) and are typically smaller than agricultural tractors, which are designed for planting and harvesting on a production scale.

Nonetheless, these barriers can be successfully challenged. The CPSC has issued recall notices for defects on small utility tractors with sizes ranging from 24 to 31 hp that are designed for residential (and commercial) tasks including loading, tillage, mowing, and snow removal. These recalls include tractors whether they are used for farming or not. There are several considerations in defining a tractor as a consumer product:

- Utility tractors of 50 hp or less, which represent the majority of non-ROPS tractors in commerce, are used on farms and by non-farm consumers alike.
- Some farmers are using their tractors for consumer activities when an overturn occurs, e.g., plowing a neighbor’s garden, mowing public roadsides for aesthetic reasons, or working as county highway contractors.
- Consumers buy tractors for use around the household or for enjoyment in small farm hobbies, sometimes called “sundowner” farming.
- Importers of non-ROPS tractors target consumers in their marketing efforts.
- Arguably, since self-employed farmers are not covered by the Occupational Safety and Health Act, they could be covered by consumer laws.

Examples of a crossover between consumer and commercial products include riding lawn mowers and all-terrain vehicles. Indeed, the two tractor models regulated by the CPSC as residential use products are also marketed as commercial products.

**Actions to Rebate and Require ROPS on Tractors**

In the Australian state of Victoria, tractor overturn-related fatalities totaled 43 deaths, which were attributed primarily to the absence a ROPS; 17% of these tractors were not equipped with a ROPS, and the remaining deaths were assumed to be the result of no seatbelt on the tractor in the presence of a ROPS. These deaths resulted despite a requirement that all new tractors be ROPS-equipped, compliant with Australian Standard
least 1981 statute that all tractors sold or imported into the state be ROPS-equipped. Most of the non-ROPS tractors (96%) were manufactured prior to 1980 (Day et al., 2004).

In the period 1997-1998, the state of Victoria provided rebates for ROPS retrofits, followed in 1999 by a rule that required ROPS on tractors. This approach was effective at retrofitting gray-market and other tractors and was adopted as a policy elsewhere in Australia. These policies spawned a ROPS manufacturing industry that included ROPS designs for gray-market tractors. As an example, one Australian ROPS manufacturer provides ROPS for several gray-market Japanese makes (Hercules, 2011), including Iseki, Hinomoto, Kubota, Mitsubishi, Satoh, Yanmar, and Zen-Noh. Nevertheless, even with ROPS designs available, such polices have gained little traction in the U.S. (Myers, 2002; Purschwitz, 2008).

### Actions to Sell Only ROPS-Equipped Tractors

While some Japanese tractor manufacturers reject support for providing ROPS for gray-market tractors that they originally manufactured for the Japanese market, other companies provide these ROPS. As noted above, an Australian company (Hercules, 2011) manufactures and exports ROPS to the U.S. for gray-market Japanese tractors, as well as for older American-made utility tractors. Gray-market Japanese tractors are of speciality, and it originally established its ROPS retrofitting business for tractors that it imported for sale in Australia.

In addition, Fredricks Equipment Company in Hartselle, Alabama, has a safety enhancement program for gray-market Yanmar and Zen-Noh tractors, exemplified by the statement: “Even with the smallest tractor sitting on your chest, your first breath will almost certainly be your last.” This company has invested in ROPS designed by Custom Products of Litchfield, Inc. (Litchfield, Minn.) for ten different makes of gray-market tractors. Fredricks Equipment Company fits every tractor that it sells with a ROPS and seatbelt as standard equipment (Fredricks Equipment, 2012).

As part of its safety enhancement program, Fredricks Equipment Company also sponsors the Used Tractor Dealer Association (UTDA), with the goal of establishing standards for marketing used Japanese compact tractors. All UTDA members have agreed to meet UTDA standards. One resulting program is Safety Aftermarket Facilitation and Enhancement (SAFE), with the intention of retrofitting gray-market tractors with safety devices, including ROPS and seatbelt, clutch safety switch, overrunning clutch, PTO shield, English-language labels, and English-language operator manuals. Currently, in addition to Fredricks Equipment Company, UTDA has 12 member dealers and two vendor members. The UTDA membership spans Georgia, Alabama, Mississippi, Louisiana, Texas, Ohio, Minnesota, South Dakota, and Utah.

### Conclusion

The proliferation of gray-market tractors may reverse the decline of non-ROPS tractors in the U.S. To counter this threat, two strategies are needed. One strategy is to ban the importation of gray-market tractors unless they have been retrofitted with safety devices, including ROPS and seatbelts. Another strategy is to ensure that every gray-market tractor sold in the U.S. is retrofitted with safety devices, including ROPS and seatbelts.

Because gray-market tractors are used for tasks other than production farming, e.g., hobby farming, policies are needed to address the safety of this growing at-risk pop-
ulation (Myers, 2011). The Consumer Product Safety Act may provide this protection by banning the importation or sale of gray-market tractors that lack a ROPS and seatbelt. Failing a retrofit intervention strategy, either by tractor manufacturers or by the U.S. government, perhaps the best hope for outfitting gray-market tractors with ROPS lies with broadening the reach of the policies of the Used Tractor Dealer Association. Protec-tive strategies also need to consider the other safety features that were discussed in this article.

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