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82. Try a one-person hitch for tractors and wagons. Newenhouse, A., Miquelon, M., and Chapman, L. University of Wisconsin, Healthy Farmers, Healthy Profits Project, Work Efficiency Tip Sheet. 2 p. 2007.

Try a one-person hitch for tractors and wagons

If you use tractors and wagons to move plants on your nursery, consider a one-person hitch that can save you time and reduce your risk for serious injury. You can cut the time you spend connecting tractors to wagons in half. Since you never leave your tractor seat, you will also reduce the chance that you or your helper will crush fingers while positioning the hitch pin, or risk getting caught between an unstable tractor and a heavy wagon.

Without a one-person hitch, the tractor driver has to climb down from the seat to lift up the wagon pole or tongue, position it exactly around the drawbar, and drop the hitch pin in the corresponding holes. Sometimes workers use a jack or blocks to hold up the heavy wagon tongue, and often drivers recruit a helper to stand behind the tractor and do the hitching. If a tractor driver is very skilled, he or she can back up to the wagon precisely so a minimum of lifting and maneuvering is needed to hook up the tongue.

Benefits:

Efficient. You can hitch up a wagon in seconds with a one-person hitch, since you don't spend any time climbing down from the tractor, positioning the wagon tongue, and climbing back up to the tractor seat again. Since these hitches have either a bigger receiving end or a wider opening on the wagon tongue than a regular hitch, it is easier and faster to back a tractor into the optimal position for coupling. The ease and simplicity of the one-person hitch means that nursery managers



Hitching with two; placing the pin.



One-person hitching systems are safer and quicker.

can make use of a wider labor pool for tractor tasks. Even minimally skilled tractor drivers can quickly hitch and unhitch wagons. If you normally use a helper to lift the wagon tongue and drop in the hitch pin, the one-person hitching system can free up that person.

Profitable. Using one manufacturer's design as an example, the parts for the Agri-Speed hitch cost \$275 for the tractor and \$175 for the wagon, which equals \$450 for one tractor and one wagon. If you buy a system for 1 tractor and 4 wagons (\$975), and labor is paid at \$10/hour, it would take 98 hours of freed up labor to pay for the hitching system. Factor in the savings you gain by preventing time off work due to accidents, and the one-person hitch can pay for itself in short order.

Less risk of serious injury.

Each year, numerous agricultural workers suffer injuries in hitching accidents when heavy equipment crushes their fingers, or when they become pinned between the tractor and the wagon. Workers sometimes slip and fall while hitching or unhitching, and then risk being run over. Anyone who has ever backed up a tractor towards a person who is helping them hitch can see the inherent danger in this task. It's a situation that is best avoided. Many factors combine to make the task risky and unpredictable, such as sloping or uneven ground, mud,

WORK EFFICIENCY



Tip Sheet

A series of tip sheets on labor efficiency for nursery field work.

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slippery surfaces, uneven wagon loads, differences in tire inflation, clutch and brake performance, interference from noise, misunderstood communication between driver and helper, and the hectic pace of nursery work.

Hitch Safely!

Check your owner's manual for safe hitching points. Usually the drawbar is the safest place to hitch a wagon, since a tractor can flip over backwards if the load is hitched higher up such as from the seat bracket, axle, or 3-point lift arms. Dangling, loose chains can catch on a stump or rock and also cause a tractor to flip.

How does it work? There are several one-person hitch systems on the market designed for tractors, pick up trucks, or utility vehicles. See below for contact information about three of them. Each type has a different coupling system, and we encourage you to research which one would work best for you. Look for a system that is built for heavy duty use, not systems designed for trucks pulling recreational trailers. Some styles fit on the tractor without interfering with the PTO. Some are simple to remove if you want to use the tractor for a task without the hitch. Most one-person hitch systems are sold separately in two different units: the part that fits onto the tractor and the part that fits onto the wagon. They are sized to fit your drawbar hole and hitch pin. Many nurseries figure out how many tractors and wagons they run during peak season and buy components to match.

The **Agri-Speed** hitch is made of two heavy duty steel components: one fits onto the drawbar of the tractor and the other fits like a sleeve onto the tongue of the wagon. A foot-like brace holds the tongue off the ground and a long diagonal rod points up from the top of the tongue towards the tractor. This rod acts as a guide to help the tractor driver hook up. The driver aims a set of "v" shaped arms on the tractor hitch toward the long diagonal rod, they connect, and the hitch raises the wagon tongue. A coupler falls into place

hooking a 1 3/4" thick steel ring at the tip of the wagon tongue. To unhitch, the driver pulls on a flexible steel cable which runs from the coupler to within easy reach and either drives away from the wagon or lets the wagon roll away.

With the **Stafast Hitch**, a funnel-like receiver unit bolts to your tractor. A spring on the wagon unit holds the tongue up so that when you back the tractor towards the wagon both align and connect. Pull a cable to unhitch. Install the tongue unit by welding it permanently onto the wagon.

The Canadian-built **Attach-Matic** features a ramp-like unit which attaches to the tractor drawbar, and a receiver which attaches to the wagon tongue. When you back up the tractor towards the wagon, the tractor lifts the tongue, the receiver slides up the ramp and the wagon connects.

Where do I get a one-person hitch?

Agri-Speed Hitch

2866 Quail Avenue
Arthur, IA 51431
Phone: 800-551-4554
Fax: 712-675-4733
www.bergmanmfg.com

Stafast Hitch

13586 N 500 W
Nappanee, IN 46550
Phone: 574-773-3397

Attach-Matic, Inc.

116 Route 165 Sud
Ste-Sophie d'HaliFax
Quebec, Canada GOP 1L0
Phone: 819-362-2392 or 800-230-9077
Fax: 819-362-6731

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This material was developed by the Healthy Farmers, Healthy Profits Project, whose goal is to find and share work efficiency tips that maintain farmers' health and safety and also increase profits. For more information, call (608) 262-1054 or visit our website at <http://bse.wisc.edu/hfhp/>

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