As bales are retrieved from field, they're arranged in layers by powered rollers. Each completed layer is picked up by an overhead clamp and loaded onto a pallet at rear.

"OUR HAY IS NEVER TOUCHED BY HUMAN HANDS"

Self-Propelled Hay Bale Stacker, Retriever

When Marvin Kruse decided to add alfalfa as a cash crop on his Tecumseh, Wash., farm, he wanted to do it without adding any more labor to his operation. The only way he could handle 150 acres of hay with just two people was to build a machine to automatically retrieve and stack the bales.

"I designed the machine and started gathering parts a few years before building it," says Kruse, who built his "Hay Pal" bale retriever and stacker in one winter in his shop. The self-propelled machine, powered by a 262 propane-powered Chevy engine, scoops bales up one at a time from the field and loads them onto wood pallets for easy handling with a forklift for storage or to load onto flatbed trucks.

"Hay Pal" picks bales off the field with a bale chain and carries the bale onto a roller-equipped bed that moves bales into varying patterns for stacking on a pallet. The stacking pattern is changed each layer to tie the bales together, forming a neat 6-layer cube of 60 bales.

"When we first built it the operator had to manually control the hydraulic orbit motors which move the bales into different stacking patterns. After using it for a year, we modified it with microswitches and solenoid controlled hydraulic valves so that it would create different tie patterns automatically. Now the operator can create any tie pattern by the simple flip of a switch," explains Kruse.

The bale machine's Chevy engine controls a hydrostat motor out of a Massey combine. The hydraulic motor is hooked up to a 3-speed transmission and an Army truck transfer case which powers the front-wheel drive axle.

The machine handles all bales as they're dropped by the baler. As each layer of bales is completed, an overhead clamp picks up the layer and stacks it onto a pallet carried on the rear. When the stack reaches 6 layers, the pallet is dropped off. Loaded pallets are the correct width and height for truck transportation and can be loaded with a forklift directly onto a truckbed. The pallets also provide good air circulation for stacking in hay sheds. Pallets of bales can be stacked on top of each other.

"Even though we raise 150 acres, our hay is never touched by human hands and all work from start to finish is done by two of us. There's more demand for small bales than large bales because waste is reduced and there's more control over feeding. Our equipment makes small square bales as efficient to handle as large round or square bales," says Kruse, who has patented his bale machine and is looking for a manufacturer.

For more information, contact: FARM SHOW Followup, Marvin F. Kruse, Rt. 3, Box 178, Tecumseh, Neb. 68450 (ph 402 335-2300).

Kruse uses a forklift to load the automatically-stacked 60-bale pallets onto trucks.

The self-propelled rake is equipped with an up-front cab and a Pontiac V-6 engine.

FREES UP A TRACTOR AND REDUCES WHEEL TRAFFIC

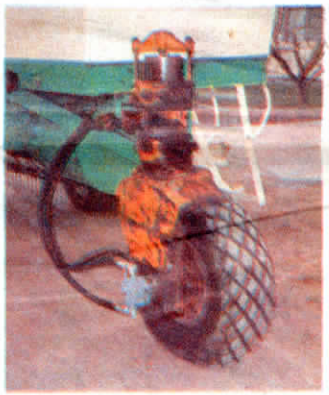
Self-Propelled Rake Speeds Hay Harvest

Mike Corrales, Othello, Wash., "self-propelled" his Allen pull-type double V-rake by removing the cab and power steering system from a New Holland automatic bale wagon and mounting them on the front of the rake.

Corrales welded the cab to the front of the frame and installed a Pontiac 231 V-6 engine directly behind it.

"It's much easier to operate a self-propelled machine than a pull-type one," says Mike, a commercial hay producer in partnership with his father Angel and brother Steve. "The short turning radius means it handles corners better than any pull-type rake and we can bring two 16-ft. swaths together. The front tire, which pulls and steers the rig, replaces four tractor tires so there's less damage to alfalfa regrowth. The Pontiac engine is so fuel efficient that we were able to rake 250 acres of hay on one 30-gal. tank of gas. We got the idea from the Allen Co., which at one time tried to build a self-propelled rake but gave up on the idea. We were expanding our operation and were at the point where we had to either make the conversion or buy another tractor. The Allen rake cost $15,000 and self-propelling it cost only another $5,000."

Corrales built the rig's drive wheel out of one of the four front-end columns from a 4-wheel lumber carrier used to straddle piles of lumber. They removed the wheel shaft from the carrier column and installed a home-built bracket in its place, mounting the hub and hydraulic motor on opposite sides of the bracket. The wheel mounts under the front of the cab. A gas tank and rectangular hydraulic reservoir also mount under the cab.



The rake's single drive wheel is driven and steered hydraulically.

The rake is hydraulic driven by three separate hydraulic pumps which operate the steering, raking and propulsion. There are six controls: one starts and stops the hydraulic system, one lifts and lowers the rake baskets up and down, two extend each side of the rake, and two adjust the angle on each side of the rake.

For more information, contact: FARM SHOW Followup, Mike Corrales, 680 Filbert Rd., Othello, Wash. 99344 (ph 509 269-4245).