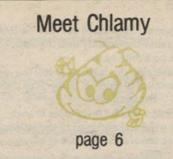


page 5



Testing . . . page 8

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February, 1984

Volume 2, Number 2



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Fruit shipping remains stable; grain shipping is another story

Taiwan is a long ways for a Washington apple to travel. And so is Russia for a bushel of Washington wheat.

Even getting these products to a port, such as Portland and Seattle, can take much planning and effort.

So far, transportation for the fruit industry has run fairly smooth. In the grain industry, however, problems are arising from the abandonment of rail lines.

Both agricultural industries do have a few common concerns, however, such as the new federal excise tax on trucks and the regulation of truck rates.

This July, the new tax on tandem trucks licensed at 33,000 pounds or more will be \$1,600 each. Most farm trucks, which are smaller, are exempt, providing that they travel less than 5,000 miles a year.

The Washington Association of Wheat Growers (WAWG) has agreed to support the lobbying efforts of the American Trucking Association, which opposes the tax. according to Tony Viebrock of Waterville. Viebrock is the 1984 transportation committee chairman for the WAWG.

"Truckers will have to charge more, and therefore, farmers will have to pay more." he said.

Adding to the problem is the increased demand for trucks following railroad abandonments, and the possibility that more and more farmers will go to bigger

trucks for use on the farm, he said.

The Washington State Horticultural Association also feels the federal license tax is unfair.

"The tax does not differentiate between the truck used full time and the one used only occasionally, such as at harvest time, said Bill Dewitt, manager of the Wenatchee Traffic Association.

The traffic association, supported by growers and others in the fruit industry, works closely with the horticultural association.

"We feel that it is very discriminatory," said Dewitt. "We would prefer a tax on the gallons of diesel used, or the mileage, rather than the weight."

Dewitt said that the association would also like to see the deregulation of truck rates on the state level. Deregulation has already occurred on the federal level. Deregulation on the state level may result in better rates for fruit shipped in Washington. For example, it can now cost more to load ships in Vancouver, Washington, than Portland, Oregon, Dewitt said.

Deregulation may result in more competitive costs, he said.

Overall, people in the fruit industry did not express many worries about the transportation of their products. However, it is a different story in the grain industry.

GRAIN

Fewer train whistles are being heard across Eastern Washington.

And that means more worries for the grain farmer.

Two counties which have recently been struggling with the problem are Garfield and Douglas.

The outcome looks good for one--but not the other.

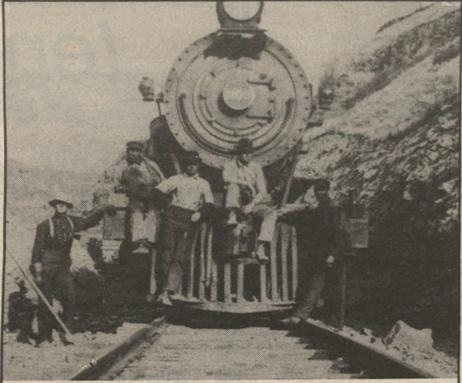
Union Pacific Railroad had actually abandoned a 30-mile branch line from Pomeroy to Starbuck for more than two years when the line was privately purchased Jan. 9.

During those two years, the grain was shipped by truck, according to Lora Lund, administrative assistant for the Port of Garfield.

The port tried to find someone to purchase the line for some time, but after having no success, eventually got as far as the process of buying it to lease to a short-line operator.

But at the last minute, Joseph Lux of Spokane stepped in and purchased the line much to the satisfaction of the port. It was determined that the one and

continued on page 2



The rails for the Mansfield Spur in Douglas County were first laid about 75 years ago. With its possible abandonment this spring, wheat growers are forced to look at other shipping alternatives. This incident of rail abandonment is not isolated, however, and roads and highways are becoming overburdened by truck traffic. Rail abandonments have not affected the fruit industry much, however, because of the small percentage of fruit shipped by train.

FRUIT

The spot shortage of equipment gives more hassles to the fruit industry than any other transportation-related problem, said Dewitt.

Ninety percent of Washington fruit is shipped by truck, with the remaining 10 percent shipped by rail.

Bad weather and heavy shipping periods usually cause the periodic shortages, usually from 10 days to two weeks.

For example, at the end of November, many truckers were hauling Christmas trees, leaving fewer trucks for fruit.

"There are times during the year that we feel we could ship a lot more apples in a given week if we had the trucks available," said Chuck St. John of the Washington Apple Commission.

St. John noted that one factor affecting the availability of trucks is that truckers like to make round trips. For example, if a shipment is sent to New York, the trucker wants to haul something back.

Or, he said, a firm may be contacted in Dallas to pick up a load of apples, but

the trucker there needs to bring continued on page 11

Grain Transportation continued from page 1

one-half to two million bushels of grain could be shipped cheaper by rail than truck and barge, Lund said.

The line could be back in operation in late spring, she said.

However, there is a good chance the 60-mile long Mansfield Spur in Douglas County could be permanently shut down.

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For several years, a Mansfield Spur Task Force, Central Washington Grain Growers and the Port of Douglas County have studied the problem.

Their recommendations pointed to more cost-savings from shipping by rail than truck.

An attempt was made last fall to form a rail district which would enable federal and state funds to be used for the purchase and rehabilitation of the line. The measure fell by four votes.

Burlinton Northern has announced that the line will be abandoned April 1, meaning grain will in all likelihood be trucked to Coulee City or Wenatchee.

This, and other abandonments in the state have caused wheat growers to become increasingly concerned about the state of highways and roads in Eastern Washington, Viebrock said.

"Generally, the accepted roads in Eastern Washington are going downhill rapidly because of the number of railroad abandonments," he said.

"It's beginning to be a very serious situation in most parts of Eastern Washington," he said. "County road departments are really being stressed."

Cecil Brennen, a grain transportation consultant with Gratron in Portland, noted that, for the farmer, location often determines whether or not it is more economical to ship grain by truck, rail or barge.

He said that he doesn't have exact figures to compare the cost of trucking

However, he pointed out that "a 2600 ton train will certainly beat a 30-ton truck on a mile basis.'

"Basically, the railroad is still the most economical to ship out of the Wenatchee area," Brennen said.

Brennen said he feels more branch lines will be abandoned as the railroads "work toward the concept of volume movement.

and a favorable balance of trade, and "absolutely oppose the user fees," Viebrock said.

User fees, he said, would "hit right at the farm.

The WAWG is also concerned with cargo preference laws, which say that 50 percent of the grain must be shipped on American ships, which are often 50 to 100 percent more costly.

I don't think it is a catastrophic picture for the future, but it certainly is a dismal picture.

Douglas County is one area caught in a "Catch 22" position as far as transportation, Brennen said.

In order for the line to handle hopper cars, it would have to be rehabilitated. But the steep grades to Wenatchee, especially during the winter months, and more facilities needed at Coulee City, are difficulties with the trucking

alternative. "I don't think it is a catastrophic picture for the future," Brennen said. "But it certainly is a dismal picture.

"I feel that we are very fortunate in the Pacific Northwest that a minimum miles of lines have been abandoned overall," he said.

Burlington Northern and Union Pacific have instituted lower rates because of the competition with barges, he said.

But some railroads are also purchasing barges, as well as lowering rail rates, to get the traffic off the river, Viebrock

The WAWG feels that the railroads are trying to control the entire transportation of grain along the Columbia and Snake Rivers, he said.

The WAWG feels that the waterways are also essential for national security

The association would like the departments of defense and labor share that maritime subsidy, Viebrock said.

Also, proposed user fees for the waterways are threatening barge traffic, Viebrock said.

"Wheat growers need to be really concerned with that," he said.

The federal government has been putting pressure on Congress for the user fees. Now, the Army Corps of Engineers has the main burden of the

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Jan. 19, 5 p.m., Ag Expo

Eldon Hawkins of Waterville clowns around at the close of the Agricultural Exposition in Spokane last month. Hawkins, who manages Waterville Auto Company, spent three days at the Spokane Coliseum talking to farmers about Melrose Spra-coupes.

The event attracted farmers from throughout the northwest to see the latest products and services available to their industry.

Barnes Welding & Machine and Barnes Farm & Orchard News appreciate all the people who stopped by their booth and supported the show.



Published by Barnes Welding & Machine

Kathleen Rivers, editor

Barnes Farm & Orchard News is mailed monthly to farmers, orchardists and others with agricultural interests in Eastern Washington. For information or to add your name and address to the mailing list, write to Barnes Farm & Orchard News, Box 614-A. Waterville, WA 98858, or call 509-745-8588.

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Weldon Barnes'

Machine & Welders Shop

Editor's Note: Weldon Barnes, co-owner of Barnes Welding & Machine, has 45 years experience working with metal. If you have questions about welding or working with any kind of metal or machine, send them to:

> **MACHINE & WELDERS SHOP** c/o Barnes Welding & Machine Box 614 Waterville, WA 98858

Interviewed by Charles Herring

Here's the channel of a trailer tongue. It has cracks in the metal where the channel bends. (See points A and B in photo). How would you fix this?

Note that the cracks are right after the bend. This is important because any time you bend metal, you have to heat it first, and when you heat metal, you weaken it. The best way to fix this would have been to prevent it by welding support across the inside of the tongue (from point A to point B). This would cut down on vibration and keep the weakened metal from stretching . . . you can see where the metal stretched. ... see how thin it looks by the crack.

What kind of welding rod would you use to repair the crack?

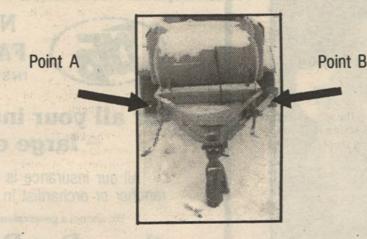
Watch the sparks when I use the grinder on the crack. (He takes a

grinder and cuts a V almost completely through the cracked metal.) See those sparks . . they're orange and as they fall to the ground, they don't flare up. That means this is mild steel and it should be welded with 7018 welding rod.

Is there anything special to watch for when doing this kind of weld?

Here's a cultivator chisel point. As you can see, the tip is worn and the rancher I talked with bought a set of chrome alloy tips and a high alloy welding rod. If somebody asked you how to do this job, what would you tell

You see in the curve above the tip, how



It's an easy weld because it's on a flat surface. When you weld a vertical surface, you have to be very careful about welding too fast--getting the metal and rod too hot. On a vertical surface, the parent metal and welding rod can just drip away if you get it too hot. On a flat surface, like the top of this channel, the metal will just stay here--it won't drip away.

the metal has stretched out. See how it's thinner just above the tip compared to the middle? Well, if a guy came to me with this, I'd tell him to use the chisel point until it wore out because it's already too worn to make a money-saving repair. Also, you see he's already got hard facing on the tip. The hard facing is made with tungsten--vou can't get a harder surface than that. So I don't think the new alloy



Weldon Barnes

tip would help anyway.

The problem is that the hard facing is dull. That means it can't cut through the dirt as well and takes more power to pull. What I would have done was just hard face the side of the chisel that is supposed to cut through the dirt. That way the friction will wear away the underside of the tip and keep the point

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In North Central Washington

Inventor's ideas spark new irrigation business

Ron Duncan of Leavenworth is working to save the farmer and orchardist labor and money.

Duncan, a self-educated, 40-year-old professional inventor, has created several devices which could drastically improve irrigation systems throughout the world.

These include a strainer-shut off valve, a swivel joint-shut off valve and a self-flushing drip irrigator head.

"Primarily, I am working on labor-saving devices for the farmer," Duncan said. "I try to find a need; a problem of the orchardist or farmer, and attempt to come up with a solution."

The solutions Duncan has discovered so far have so excited a number of area agricultural businessmen, headed by Bob Winters, that they are putting together the financing for a business to market the products.

The new business, Irrigation Sciences, will be located in Cashmere and will sell wholesale to distributors and dealers. Dealers are already lined up, Duncan said, adding that "acceptance has been really good."

Irrigation Sciences expects to be selling its products in about three months.

Strainer -shut off valve

Duncan came up with the idea for the strainer device after finding three or four plugged sprinkler heads a day in his horse pasture near Leavenworth, where he moved from Florida about two years ago.

By just rotating the handle of Duncan's device, a valve will shut off the sprinkler so that the irrigator can clear it out, saving him from shutting down the entire system and taking the sprinkler apart.

The strainer valve takes about two minutes and no special tools to install. Cost is expected to be under \$2 each.

The strainer will eventually come in various sizes up through six inches and will be available to the homeowner as well as the commercial grower. Swivel joint-shut off valve

Another invention of Duncan's, the swivel joint-shut off valve, will particularly help growers with overhead tree sprinklers and cranberry irrigation systems.

For example, if an apple grower has a 15-foot high sprinkler with a broken spring, he will only have to pull a pin and lay down the sprinkler, automatically shutting it off.

Under a conventional system, the orchardist would have to shut off the line and climb a ladder before fixing it.

In a cranberry bog, the grower can simply swivel down the sprinklers before cultivating, saving him the time and effort of moving them out of the way. Self flushing Drip irrigator

A third invention to help the irrigator is an Easy Flush Drip Irrigator, which is essentially a self-flushing drip irrigator head.

In drip irrigation systems, the tiny holes, called emitters, can become easily clogged by debris in the water.

"When you have millions of heads, it is difficult to know which ones are plugged," Duncan said. "With the Easy Flush Drip Irrigator, each time the water is turned off, the head moves back. When the water is turned on again, the emitter washes itself out and the head moves back and begins dripping.

"It eliminates a lot of checking."

Duncan's drip irrigator head is also variable and can adjust the flow of water

by merely turning a dial, a feature adaptable to the growth of the plant. In conventional emitters, the hole is predetermined to allow only a specific amount through, such as a half-gallon per day.

continued on page 10

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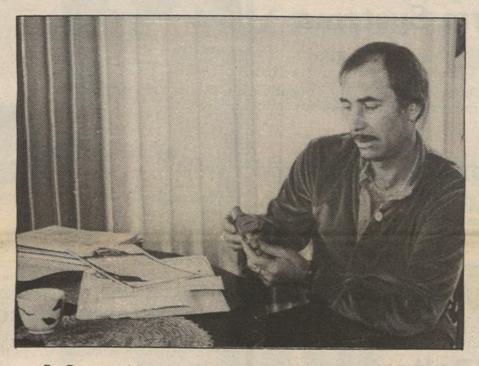
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Ron Duncan explains the model of his strainer-shut off valve, one of his irrigation inventions. On the table before him is one of his patents and a file folder of documents gathered in one patent search.

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Chlamy is one of the plant products offered to agriculturists by Micro-Ag, Inc., in Eastern Washington. The products, including seaweed seed fertilizer, are designed to improve the health of other plant life.

And they are so safe that one distributor takes the seaweed in his tea before it is liquified, and a vitamin company has begun testing it for use in its products.

"There's nothing on the market that will touch it," said Ruben Fode, a distributor of Micro-Ag in Lind.

"Seaweed makes the minerals available to the body. It also has every known mineral known to man and helps release energy."

The same principle works with plants--whether it is wheat, peas, apple trees or house plants.

Clarence Hamilton, a grain grower near Colfax, used the seed fertilizer last year and said he will "definitely keep using it.

"It doesn't cost, it pays," he said. The fertilizer cost about one cent per bushel, but it cut back his seeding rate by 10 percent and improved germination. Some growers have reported cutting back their seeding rate by as much as 50 percent.

Dean Culbertson, a distributor in Walla Walla, also recommends that the farmer use the liquified seaweed with his herbicides.

By using five and one-third fluid ounces, or two dry ounces, per acre with the herbicide, "many farmers are cutting back up to 30 percent of their herbicide rate," Culbertson said.

"It makes for better, faster weed kills without stressing the plants. In the

long-term, the yields would be increased."

Culbertson explained that anytime a plant is stressed, as normally happens with herbicides, the yield is hurt. "No one in agriculture will argue that point," he said.

Culbertson, who said it works well with onions, said "not only does it not stress the plant, it turns around and gives them shots in the arm."

Growers can apply liquified seaweed just before the boot stage in wheat, said Fode. It is hoped that with more nutrients going to the seed, generation after generation of bigger and healthier

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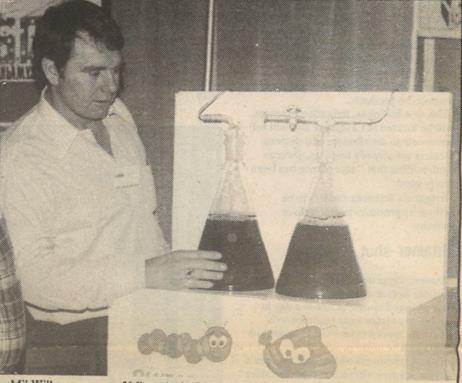
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Mil Wilks, manager of Micro-Ag in Steptoe, explained the work of Chlamys and Bluegreens to farmers visiting the Ag Expo in Spokane last month.

Range-crop production workshops

Several programs on range-crop production will be held in Douglas County in February.

The first meeting will be held Feb. 9 at 1 p.m. at the Mansfield Fire Hall.

The second program will be held Feb.

14 at 1 p.m. at the St. Andrews Grange Hall.

Two programs will be held Feb. 22--the first at 1 p.m. at Merle Armstrong's shop, and the second at 7:30 p.m. at Farmer Hall.

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by using seaweed and algae products

seeds will be developed, he said.

The foliar feeding will help increase the sucrose level, which is very critical to the health, growth and yield of plants, Culbertson said.

Micro-Ag is also interested in building plant sugars even before a seed is sown--in the soil, itself.

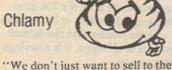
Chlamy, characterized by a cartoon drawing, is a natural soil builder. The algae produces sugar, and therefore, organic matter.

Besides making the soil healthier, it helps prevent erosion, according to Mel Wilks, manager at the company's main office in Steptoe.

In winter wheat, Wilks suggests that Chlamy be applied with the last fall operation and in the spring when the soil opens.

"You don't work him in," he said. "If you work him in. you'll kill him."

With no-till operations, Wilks said about 50 percent of the soil should be showing, as you want Chlamys on the



farmer," Wilks stressed. "We want to help change the whole program."

The algae is applied at a rate of five gallons per acre, consisting of 80 percent liquid Chlamys and 20 percent Bluegreens, which are nitrogen-fixing algae. It can be applied by ground or

The algae program costs about \$8 an acre, and may be more popular at this time in high production and irrigated areas rather than dryland areas, where out-of-pocket costs are especially critical, Wilks said.

"It will move into the dryland areas," he predicted. "But it will take longer." The algae will produce from 200 to

1.500 pounds per acre of polysaccharides, Wilks said. One

Tillage Meeting

The third annual Conservation Tillage Conference will be held Feb. 28 and 29 at the University Inn in Moscow, Idaho.

The event is put on by the Inland Empire Chapter of the Soil Conservation Society of America.

Sign-up deadline

Growers have until Feb. 24 to sign up for the 1984 federal farm program.

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hundred pound bushel wheat stubble plowed under will produce about 60

'The algae will do in a few short years what would take a lifetime under conventional conditions," he said.

"Farmers have to start thinking that the ground out there is alive," Fode

"The algae is creating an environment of healthy soil," Culbertson said.

"Then," Fode added, "we have a

healthier plant and, then, healthier human beings.

"The future looks promising. It's a matter of balancing--of balancing the soil, balancing the plants, balancing us -- and that's the key to health."

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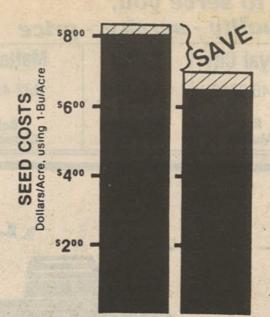
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Tests look for plant malnutrition

Agriculture has advanced far beyond the days when a farmer would just look across a field and guess whether or not his wheat was nitrogen deficient.

Or an orchardist would just take a bite of an apple to see if they were ready for harvesting.

The sampling of soils and plant tissues has "gone out of the witchcraft area into a scientific area," noted Marr Waddoups of Kennewick.

Waddoups heads a private company, Marr Waddoups Associates, in Eastern Washington that studies an average of 40,000 soil samples and four to five thousand plant tissues a year.

He credits county agents, fertilizer companies and the fruit industry for educating the people.

Laura Mrachek of Stemilt Laboratories in Malaga, said it is "kind of hard to put a dollar value" on testing, but that it "has the potential to save money." Mrachek and her husband, Mike, started their lab about five years ago and mainly service orchardists.

Along with soil and leaf analyses, they are involved with a fruit maturity testing program. Laura heads the lab, while Mike works as a horticultural consultant for Stemilt Growers.

The use of scientific testing; of knowing when and where to take the samples and what to look for, can be very beneficial to the grower.

"There is a real emphasis now on quality and productivity," Mrs. Mrachek said. "And in order to be on top, you need to take a progressive approach and you can start it with a more intensive soil and leaf analysis program."

Besides a number of private companies in Eastern Washington who specialize in the lab work, the University of Idaho studies samples sent to them by county agents and



Laura Mrachek works at her lab in Malaga.

individual growers.

The U of I lab, supervised by Nancy Parrott, receives samples from all over Washington and Northern Idaho. It began servicing Washington when the

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soil testing lab at Washington State University shut down about two years

Waddoups said that although there is a fee for the tests, in actuality, "it doesn't cost anything . . . it makes money.

"It doesn't cost anything when converted to an acre basis," he said. For example, he said, if a 200-acre

field is sampled for \$40, or 50 cents an acre, and the results save the farmer two pounds of nitrogen, it is a savings of 60 cents an acre.

Or, he said, if two more pounds increases his yield by \$8 an acre, for example, it is more than worth it.

Mrachek noted that nitrogen studies in the past few years have directly related high nitrogen to green Golden Delicious apples, and reduced nitrogen to firmer, Red Delicious apples.

"The level of nitrogen is directly related to fruit quality," she said.

Mrachek said that a soil sample will determine the soil fertility--what is available to the tree in the soil profile.

On the other hand, leaf analyses determine the tree nutrition--what the tree actually takes up.

Tissue sampling is not done with wheat, Waddoups explained, because it is "too late . . . the damage is already done."

Soil samples are taken as deep as six feet in dryland areas, he said. "In dryland, we are particularly interested in moisture," he added.

An average of samples may be necessary, or different programs may be recommended for different areas in a field or orchard.

For example, in a hundred-acre field, the bottom of a north slope may be much different than the hill top. Or one corner of an orchard may have shallow, rocky ground, while another corner may have sail eight foot does

have soil eight feet deep.
Although Waddoups said that they
tend to take an average, in some cases it
"might pay to split it."

The Stemilt Lab also offers an apple maturity service with an iodine solution. Staining the inside of an apple will determine how much starch has been converted to sugar. The iodine won't stain the sugar.

The lab now sells the iodine solution to warehouses and growers.

"It's a service that has really caught on this year," Mrachek said. "It's a harvest indicator as well as a segregation tool for storage."

She feels that more people are becoming aware of the importance of the tests than in the past.

"They are finding that the old answers are not adequate.

"A lot of old school fellows look at the top of the tree for new growth. But that doesn't tell the whole story."



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Farmers work on saving soil, improving crops

Wheat growers may be looking more critically at the 1984 Federal Farm program since December's spell of cold weather.

Dr. Ken Morrison, cooperative extension agronomist at Washington State University, made this prediction at the joint annual meeting of the Foster Creek and South Douglas Conservation Districts and the Douglas County Crop Improvement Association in Mansfield Jan. 11.

Last fall, many farmers indicated that they would seed fence to fence because they did not find the program beneficial to their operations.

"There may possibly be better participation than last year," Morrison told the group of about 50 farmers.

"Overall, most of the wheat production areas hit with subzero temperatures had, fortunately, pretty good snow cover over most of the area."

But, he added, there may be some injury in the Ritzville area where some of the snow had blown off. There also may be some areas which will suffer from snow mold, he said.

Morrison also spoke at the day-long meeting about wheat varieties.

Keven Guinn, area range conservationist with the Soil Conservation Service (SCS) in Ephrata, spoke about range management; Greg Schmick, custom no-till represtative, talked about soil physics and fertilizer placement; and Keith Pfeiffer, manager of the Washington State Crop Improvement Association, talked about county seed certification and movement of seed production to the Columbia

A farmer panel also discussed their results with no-till experiments and Brian Lanning of the SCS in Waterville gave a presentation on chemical trials.

Wheat Varieties

During the presentation on wheat variety trial data, Morrison offered a number of suggestions and observations.

For example, he said that it has been found that the stiffer straw of Dawes will help hold up the weaker straw of Sprague, but it "doesn't always pay to

"I am not ready to recommend that mixture yet," he said.

Morrison said that there is a lot of interest at the present time in hard red winter wheat because of a premium price. However, he added, "one of the problems with hard reds is that the yield potential is not there yet."

Morrison also said that some growers need to seriously look at spring wheat or barley as a weed control tool.

He suggested a three or four-year rotation of, for example, winter wheat, spring wheat or barley and summer fallow, instead of winter wheat-summer

Now, he noted, the "money is better with spring barley than with spring wheat."

Also at the meeting, Lanning talked about the results of chemical summer fallow trials from 1981-83.



Experiments in no-till farming were discussed by a panel at the annual conservation meeting in Mansfield. From left are Larry Tanneberg, a farmer from Coulee City; Jim Killingsworth, a representative from Western Farm Services in Coulee City; Alan Loebsack, a farmer from Waterville; and Jim Kropf, Douglas County Extension Agent from Waterville.

Lanning stressed that it was found that "different combinations will work better in different situations."

"You have to know what's out there," he said. "Know your fields. Then you can select the chemical or group of chemicals that will fit the situation best.

"Each guy needs to look at his own situation.

Lanning presented some moisture data, noting that it "shows very little difference between chemical fallow versus regular summer fallow.

Reduced tillage definitely has erosion control benefits "where more stubble is left on or near the soil surface," he said.

"If you can lose some of those tillage operations and keep more stubble out there, then it is well worth the dollar." He added, however, that the results

are very preliminary and can be influenced by a number of variables.

Crop Improvement

In the afternoon, Pfeiffer told the group that the crop Improvement Association will move the production of breeder and foundation seed to irrigated areas mainly because of crop history.

Last year saw the largest acreage in certification with 50,000 acres in the state, up 5,000 from the previous year.

At the present time, one-third or less of the crops in Washington are seeded with certified seed, Pfeiffer said. "We still need a lot of education," he said.

Large Machine Storage

continued on page 11

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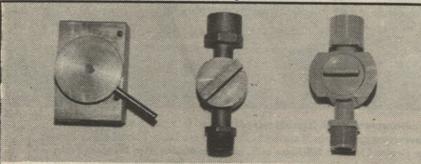
Irrigation Inventions continued from page 5

The strainer is not Duncan's first invention. A former plumber and general contractor originally from California, Duncan said he has "always loved mechanical things and has always been one to take things apart and see how they work."

He seriously began inventing about five years ago. And unlike most

Barnett Brass and Copper of Jackson, Florida, and the products should be on the market next year. He still holds a royalty contract.

Coming up with a solution to a problem may take anywhere from 10 minutes to two years, Duncan said. Then it takes from nine months to a year to make the product available.



This photograph shows the progression of the strainer-shut off valve invention by Ron Duncan. The two models on the left are fashioned from metal; the far left one was the original model by Duncan and the middle model is one refined by engineers. On the right is one of the finished plastic valves like the ones to be marketed in a few months.

inventors, he is able to make a living at

Duncan is also one of few inventors who will hire out to a company to solve a specific problem. In Florida, he developed a line of snap-on plumbing methods for a company, including faucets which will clamp to a countertop and take only minutes to install.

"The faucet is designed for do-it-yourself ladies--even kids," he said. A conventional faucet takes an average of 35 minutes to install, he said. Duncan sold the patent rights to "It's a challenge to make it right and make it work," he said.

The process can also be very expensive. For example, a mold for a plastic piece, such as the strainer device, can cost from \$40,000 to \$120,000 to make. "It also might take an equal amount to build models and test them," he said.

Duncan worked about three months with tool and dye makers at Cashmere Manufacturing in building the mold for the strainer.

The molds must be made within a

thousand of an inch tolerance. A human hair, Duncan said, is about five times that size.

"You can't see any error," he said.
"You have to use a machine to tell if you've made a mistake."

After the idea, drawings and preliminary model are made, an engineer refines the drawings. Duncan then makes the final models and engineers test the invention before the final mold is made and manufacturing begins.

Stewart Industries in Ballard is now starting to produce the strainer-shut off valves and they will be assembled and shipped by Northwest Ballard Industries.

The model and testing for the swivel valve has just been completed and Duncan is now designing the mold.

"I'm rather methodical," Duncan said. "I work on an idea till I've got it. It took a year of my life for the faucet models. It's a business of frustrations; of taking other peoples' frustrations and trying to make practical solutions."

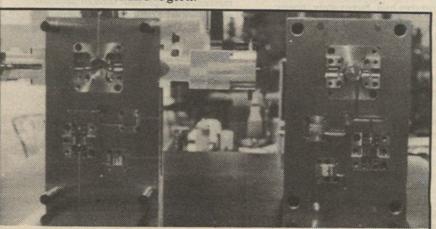
By word of mouth, other inventors and firms have heard about him and contacted him about their frustrations.

"I try to render assistance," Duncan said. "A number of people from the northeast have contacted me and I am a consultant for a number of firms."

Inventors can easily fall into a number of pitfalls, he said, such as crooked attorneys, poor advice and insufficient financing.

And although Irrigation Sciences is just in its beginning stages, Duncan said it is their "intention in the next year and a half to two years to go international.

"We eventually intend to be in all of the agricultural countries in the world," he said.



This photograph shows the mold created for the strainer-shut off valve. The cost of such molds can run from \$40,000 to \$120,000.



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Conservationist of the Year

Horace Elliott of Withrow was honored as the 1983 Conservationist of the Year at the annual Waterville Chamber of Commerce banquet Jan. 31.

The award is given annually by the South Douglas Conservation District.

Elliott believes in conserving as much moisture as possible and in subsoiling to break up hardpan for better moisture penetration.

Research Review

A Wheat Research Review will be held Feb. 13 and 14 in Pullman.

The meeting will begin at 8 a.m. on Feb. 13 in the Cougar Lounge of the Performing Arts Coliseum on the Washington State University campus. It will adjourn at noon on the following

Goatgrass Program

A program on the identification and control of goatgrass and cheatgrass will be held Feb. 21 at 1:30 p.m. at the Coulee City Grade School.

Dr. Larry Morrow, United States Department of Agriculture weed specialist, will speak at the meeting.

He has also built a 1,200-foot diversion in one field to divide the slope and reduce soil erosion.

He also uses a stubble-mulch farming practice to prevent both wind and water

Wheat Growers

The National Association of Wheat Growers will hold its spring board meeting in Washington D.C., March

March 21 is also Agriculture Day.

Conservation

The South Douglas Conservation District will meet Feb. 6 in the Soil Conservation Service conference room in Waterville at 8 p.m.

The Foster Creek Conservation District will meet at 1 p.m. on Feb. 7 at the Dry Falls Cafe near Coulee City.

Legislative Reception

The Washington Association of Wheat Growers will host its annual legislative reception in Olympia on Feb. 23 at 6:30 p.m. in the Westwater Inn.

Fruit Transportation continued from page 1

something to Washington to make it a justifiable trip.

"Sometimes there is not enough trucks to bring this direction to meet the demand," St. John said.

Dewitt noted that there is always the problem that the industry "may lose some sales" from a truck shortage. For example, a company may want the fruit for their Christmas business, and if it can't get it in time, it may cancel the

However, Dewitt said that this usually does not "badly" hurt the industry. Just to get the Washington apples shipped this crop year (Sept. 1 to Aug. 31) will take about 1,000 trucks a week, St. John said.

Unlike the wheat growers, the fruit growers are not as worried about highway repair with this heavy traffic because they are not hauling over as many back roads. Dewitt said.

"Most warehouses are not more than one-quarter mile off a state or interstate highway." he said.

These highways are generally better designed and constructed to withstand the larger trucks than are county roads.

Dewitt said that the transportation of fruit is pretty "positive at this time. Despite a lot of information we have heard about truck shortages in the Columbia Basin (for the shipment of potatoes) and of truckers going bankrupt, we have had an adequate supply of trucks." he said.

"We feel truckers have done a very adequate job for us with a few exceptions.

Getting the fruit on the market is also not as much of a concern as when the "fruit is picked and how it is stored," said St. John.

"We have to start with the highest quality, and then it has to be stored properly." he said. "The transportation aspect only affects the marketing."

Conservation Meetings continued from page 9

Also, he said, county associations are welcome to support the purchase of a plot combine. A plot combine will help cut down on the time and cost of cleaning a regular combine for the harvest of each test variety.

Washington, Oregon and Idaho are also trying to make the certification standards as uniform as possible, he said, and the association is recommending a change in rules in regards to goatgrass.

"If we find goatgrass in a field, the field is rejected until it is cleaned up and reinspected," Pfeiffer said. "However, we are not getting good success with

"We have been approached by the Washington Association of Wheat Growers to do something in regards to goatgrass."

The proposed rule change, which would be effective through 1984, would not allow for reinspection. A hearing on the standards will be held in April.

"We do want to work with you on this." Pfeiffer said.

Also at the meeting, Jim Kropf, Douglas County extension agent, gave a short presentation on the control of the

"Once you have it, it is very difficult to get rid of it," he said. "It will cross with wheat to form a sterile cross."

Burning a field won't help, he said, because there is enough protection within the seed coating to save the seed. And the problem with chemicals, he added, is that they are also toxic to

Kropf recommended that farmers go with spring cropping in areas where goatgrass has been discovered.

"Three years in a row will bring it to a

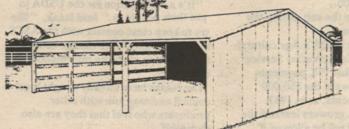
manageable line," he said. Kropf also recommended that farmers look carefully at the seed when they buy

Pesticide Training Sessions

Training sessions and exams for pesticide use certification will be held this month in Wenatchee and Ephrata. State and federal laws require certification for anyone buying or using restricted use pesticides.

The sessions will be held Feb. 16 at 2 p.m. at the Wenatchee First Methodist Church and Feb. 23 at 1 p.m. in the Ephrata PUD Building.

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Farmers sue government over farm program

A change in the interpretation of a federal farm program rule has prompted Phil and Larry Isaak and their father, Harold Isaak, of Coulee City to bring suit against the United States Department of Agriculture.

The Isaaks claim that the USDA's decision of how the \$50,000 government payment limitation will affect payment-in-kind (PIK) will damage them about \$350,000.

They expect to file the suit during the first week in February.

Last summer, the USDA's Agricultural Stabilization and Conservation Service (ASCS) indicated that PIK payments would not count toward the \$50,000 limit on cash payments, as in 1983.

But in December, growers learned the PIK bushels would not be allowed if total payments to a grower, including deficiency payments, exceed the limit.

According to the Washington Association of Wheat Growers (WAWG), many growers will approach or exceed the \$50,000 limit on deficiency payments alone.

"We have seeded only 50 percent of our crop," said Phil Isaak. "now, the best we can do is mitigate our damages the best we can.'

The Isaaks will do this by seeding the 20 percent of their acres that they had allowed for the PIK portion (767 acres) in spring wheat.

But the Isaaks feel that they will lose even though they will recover some by seeding this spring.

"This is traditionally a winter wheat growing area," Isaak said. "We are now forced to prepare the ground, fertilize and seed spring wheat.'

The difference will be a minimum of 25 bushels per acre, or around 15,000 total bushels, he said.

"What we are trying to do," said Isaak, "is not so much change the limitation rule as recover what we lost by not planting last fall."

Last month, the WAWG, who was approached by the Isaaks, brought the matter before the National Association of Wheat Growers (NAWG) at its annual meeting in Denver.

However, the NAWG opted not to bring suit against the USDA because there was "simply not enough people across the country who were affected by the ruling," said Brent Heinemann, WAWG executive director.

Heinemann also said that the NAWG has to work closely with the USDA and did not want to injure that relationship. Last year, the USDA was told by the General Accounting Office that it did not follow the law when it ruled that PIK pay ents would not count toward the

\$50,000 limitation.

Heinemann said that the accounting office threatened to sue the USDA unless an agreement was made to change the interpretation for the 1984 program.

The situation has put the ASCS "on the firing line," which is unfortunate for the working relationship with farmers,

"It's a bad position for the USDA to put their people in," said Isaak. "We try to keep close contact with the ASCS in Grant County. The change erodes their position of giving information to the farmer."

The Isaaks have already sought legal council and may join with other producers who feel that they are also damaged.

These may include, according to the WAWG, growers with just over 1,100 acres with an average yield of 50 bushels per acre. This would bring the grower to the \$50,000 limitation in deficiency payments alone.

Also, the WAWG noted, the minimum PIK enrollment is 10 percent of the acreage. So, if a grower is anywhere near reaching the limit from deficiency payments and wishes to enroll in PIK for the remainder, he must idle the 10 percent for PIK even though the USDA will not pay him beyond the portion which takes him to the limit.

Last month, the WAWG board decided the rule change will hurt the program and farmers, and voted to send a letter to the USDA objecting to the interpretation.

Isaak said that although they were unhappy over the compensation rate of 75 percent, they had still decided to participate.

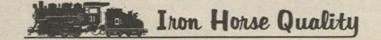
"We didn't feel the farm program was a good program this year," he said. "Even with that, we elected to go with it. We felt some responsibility for reducing the surplus.

"But once you are in the middle and someone switches the rules, that's a tough thing to accept.

"It is the first time in history that I know of that the government has announced something for the farm program and then taken it away.

"In that position, farmers won't feel a farm program is worth looking at--and that is even beyond the immediate damage.







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