



These farmers  
ain't no hicks!

Page 2



Backhoe to Boom  
Page 4

From the Field  
with Gordon Brett

Page 9

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Volume 2, Number 6

June, 1984

# BARNES Farm & Orchard NEWS

## Introducing the "Earwig Hotel"

The "Earwig Hotel" may be an answer to some uninvited guests in an orchard.

Earwigs--and "earwig hotels"--are part of a study on the biological control of apple aphids by Dr. Devin Carroll at the Washington State University Tree Fruit Research Center in Wenatchee.

The entomologist has been studying apple aphids and their parasites and predators under a United States Department of Agriculture grant since 1980.

"There is more a grower can do with earwigs, which are predators, than with parasites," Dr. Carroll said. "We are interested in earwigs because they are omnivorous--they eat a lot of different things."

"My guess is that more than half of the insects found in apple orchards are

earwigs a possible, feasible management tool.

Dr. Carroll conducted a pilot study using what his aide calls "earwig hotels" in a young orchard.

Earwigs are nocturnal insects and like to hide in dark places during the day. So, Dr. Carroll and his aide built little "earwig hotels" from folded cardboard stuffed with wadded paper towels.

The earwigs hide in the hotels during the day and feed on the aphids during the night.

"We had very good control (of the aphid population)," Dr. Carroll said. "It was a big success."

The study, he emphasized, was made on young trees without fruit. This year, the scientist intends to conduct further studies on trees with fruit.

Aphid damage is most common in young orchards, Dr. Carroll said.

"When the branches stop growing, aphids die out because they can't get enough food," he said.

The growers' biggest complaint, he said, is that the aphids produce honeydew. The insect feeds on tree sap high in sugar, extracting as many amino acids as it can and squirting out the rest. If this happens above an apple, it will cover the fruit. And if the honeydew gets wet, mold can appear, causing the fruit to be downgraded.

It can also cause russetting, especially on Goldens.

Earwigs will occasionally chew on leaves, Dr. Carroll said, but the damage found from this in the pilot study was insignificant and would not affect the production of fruit.

Besides apple aphids, it is hoped that earwigs will help control woolly aphids, which can cause serious damage to apple rootstocks. Dr. Carroll plans to study this proposed control in cooperation with Van Well Nursery in Wenatchee.

Earwigs can cause damage to peach fruit, but Dr. Carroll does not believe they would be a problem in peach orchards neighboring an apple grower who wants to integrate earwigs into his pest-control program.

By using earwig retreats, such as the "hotels" or mouse guards, growers can keep the earwigs in the apple orchards,

Dr. Carroll said.

"A peach orchard generally has a lot of earwigs already," he said. "In fact, I go to a peach orchard to collect earwigs."

Earwigs are also easier to raise than many other predators. Raised in plastic cartons and fed dog food, it is unnecessary to keep an aphid colony on hand to feed these insects.

"If we tried to rear parasites, we would have to keep the plants, aphids and parasites in the lab," Dr. Carroll said. "It would be expensive to keep them all going."

Earwigs, on the other hand, can be left alone for weeks. They can easily be raised by orchardists who may want to release the insects in their trees earlier than earwigs normally appear. Spring control of aphids, Dr. Carroll said, is usually the most effective.

Another possible advantage of aphid control by earwigs is their nocturnal habits. Because they hide during the day, they may be less likely to be killed by sprays during the day.

"It seems there is more you can do to manipulate earwigs than other insects," Dr. Carroll said. "If pickers didn't want to pick with them there, an orchardist could collect them in the 'hotels' and store them until next year."

Dr. Carroll said apple aphid control by earwigs is still in the "idea stage."

"Chances are, it will not be widely used very soon because it is unorthodox," he said.

Continued on page 8



"The Earwig Hotel"

there because of aphids. We have found at least 40 species that eat aphids."

Dr. Carroll explained that most aphid predators will "stick around" if there are a lot of aphids. However, when an aphid population declines, most of their predators will also leave.

Not so with earwigs. Because they will eat other things, he said, these insects can be effective in controlling a small aphid population--making biological control of aphids with

## Grapes make the wine



And the wine at Klona Vineyards and Winery is earning a reputation for fine quality. In the photo above, Scott Williams, left, and his father, John, sample one of their white wines. The winery is the smallest in the Yakima Valley and produced its first bottle in 1980. Turn to pages 6 and 7 for story. Photos are by Greg Shannon.



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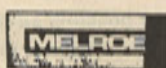


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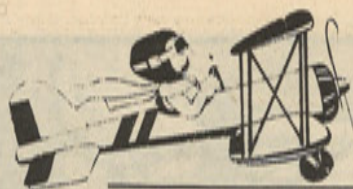
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## Barnestorming

### about the myth of hicks

For years, the farmer has been portrayed by some as the slow-moving country bumpkin hick who barely knows his alphabet and counts on his fingers and toes. Some city-dwellers still believe that the farmer has escaped sophistication; that he belongs to the most uneducated class of people in America.

These same people, I think, would be surprised to discover the education and intelligence level of the farmers and orchardists that I have talked to during the past year.

For example:

Harold Ostenson, an Entiat orchardist and a former octane chemist. He was featured in our September issue in a story about fish oil.

Peter Goldmark, an Okanogan wheat grower who has a doctorate in molecular biology. Goldmark, featured in our January issue, works with scientists in testing wheat varieties.

John Williams, a viticulturist in Benton County who also works full-time as an engineer. A story about what he is doing with his grapes is included in this issue.

Dale Welsh in Grant County and Dave Hovde in Walla Walla County--former school teachers turned orchardists. Welsh grows tart cherries in George and Hovde grows apples in a former wheat-growing area. Welsh was featured in our April issue and a story about Hovde will be printed sometime this summer.

Chuck Zimmerman, a hop grower in Sunnyside. He will also be featured in a future issue of "Barnes Farm & Orchard News." Zimmerman has a doctorate in physiology and worked 25 years with the Agricultural Research Service.

Although the growers mentioned so far have had higher education, one pointed out that in order for any farmer or orchardist to survive in today's world, he certainly can't be stupid or careless. One year of mismanagement, he noted, can spell disaster.

This management may take many different forms. For Gordon Brett of Badger Mountain and the Ramm brothers of Farmer, the future of farming partially depends on the conservation measures and the experiments they are conducting.

Brett is featured in "Barnes Farm & Orchard News" this month, and a story about Bob and Dick Ramm was printed two issues ago.

Then there is Dick and Doug Sheets and their families, Omak orchardists who sell their fruit and fruit products in their own unique fruit stand in Southern California. Their story was printed last month.

Before interviewing these people, I did not know of their educational background; whether it was gained through universities or experience or both. This knowledge surfaced later. Many of today's farmers and orchardists have degrees in agriculture, agronomy, horticulture, economics or business. Some have taken a few years of college. Some entered farming full-time after high school, gaining much of their knowledge through experience.

A farmer must use his mind, as well as his hands. Or, as one agricultural scientist noted, it isn't long that he stays in business.

--Kathleen Rivers



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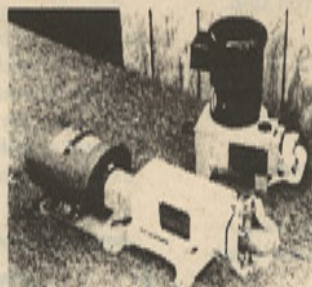
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## Weldon Barnes' Machine & Welders Shop

**Editor's Note:** Weldon Barnes, co-owner of Barnes Welding & Machine, has 45 years of experience working with metal. He was interviewed by Charles Herring.

### Equipment Modification

Equipment is so expensive that many people want to get more out of their current implements. Can you tell us generally what kinds of modifications can be done?

It's not really possible to describe equipment modifications in general because each one is unique. Most equipment can be modified in ways the average person would never even think about. Maybe the best way to get at this topic is to discuss one example of equipment modification.

A customer had a John Deere tractor with a backhoe on it. In his business, he needed to change from a backhoe to a boom off and on during many jobs. He wanted to be able to use the boom and the backhoe from the tractor. (The boom was mounted on a truck and unable to maneuver the way he'd like it to.)

Were there any special design problems involved in converting the boom to a backhoe and vice versa?

Yes! The customer wanted to be able to convert the boom to a backhoe and vice versa in 10 minutes. To do this, we had to design a support system for the implement that wasn't in use because

neither one of them could stand alone. We had to make it so a driver could easily back the tractor into place. Also, we had to avoid excessive use of bolts because they would take time to change.

The tractor already had hinges that would hold the weight of the boom/backhoe, but we had to put brackets on the implements that could handle both the vertical and lateral thrust of about 80,000 pounds. This is not hard to do, but you must know the strength of different grades of steel and you must be able to compute how much steel to use.

The support system was a tripod that had to be collapsible for storage and transportation. We did this by using tubes that slid within themselves, similar to the way a radio antenna goes up and down.

**What welding problems did you experience with this equipment modification?**

Because the boom and backhoe brackets had to be so strong, the welds had to be 100 percent--no slag inclusions or impurities.

**What do you mean by "no slag inclusions or impurities?"**

It means that if you took a cross section of the weld, you wouldn't find any pin size areas that weren't welded perfectly. Any missed spots, no matter how small, would seriously weaken the weld.

**How can you guarantee such welding perfection?**

Most jobs don't require this degree of perfection, so the average shop welder shouldn't worry about it. It takes a great deal of practice to be able to handle this weld and, in our case, each welder is certified by the American Welding Society--you have to pass a tough, practical test to be certified by AWS.



Weldon Barnes



Boom in place with the support system. The photo at the top of the front page shows the backhoe lined up for connection to the tractor.

**Do you have a tip that would help the shop welder make an extra strong weld like this?**

The best tip we can give on making a perfect weld that would withstand 70,000 pounds of stress, without hours of instruction, is to weld vertically upward (from bottom to top). Of course, it's absolutely essential that you

have the right welding rod to go with the 4140 steel we used. In this case, we used 10016 and 7018. Both are strong, mild steel rods, yet possess adequate flux to successfully fuse high alloy steels.

continued on page 11

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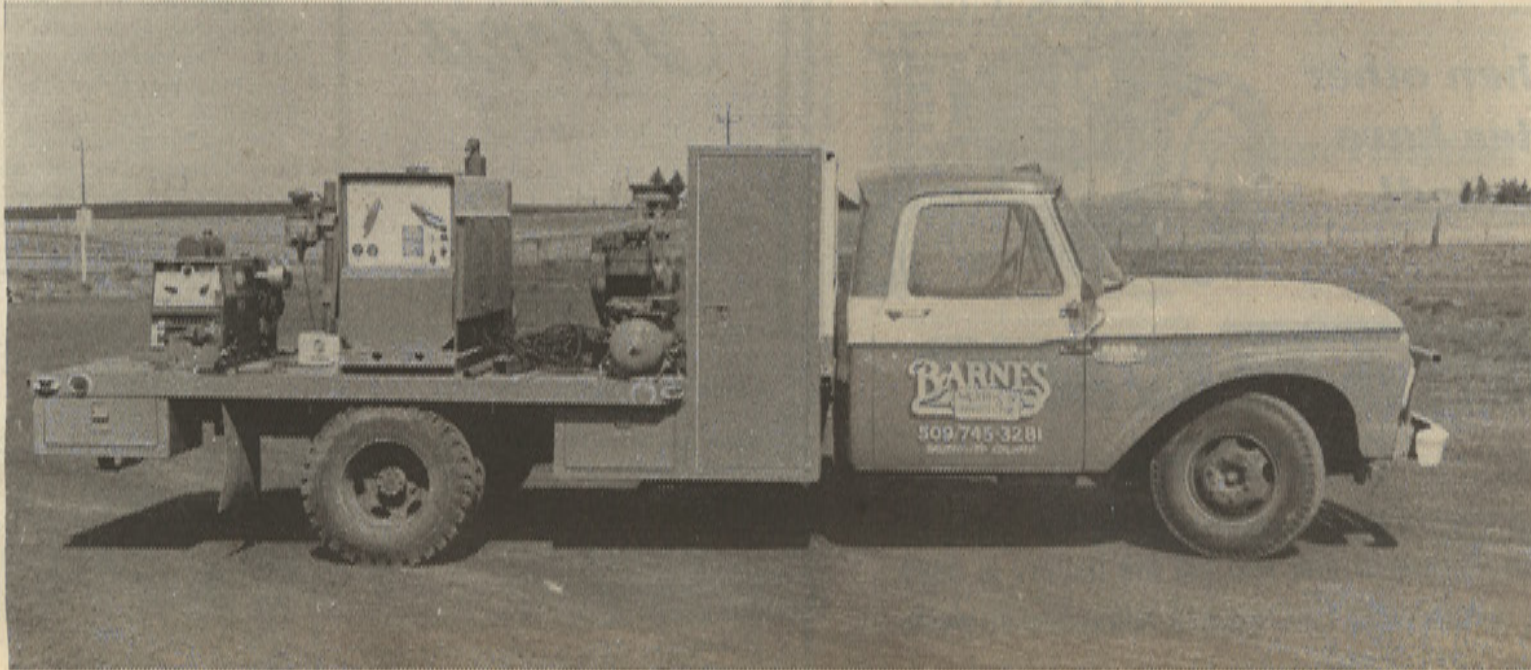
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# Yakima Valley's smallest winery turns

John Williams uncorked a bottle of Merlot Rose and began pouring the rose-red liquid, stopping just where the glass begins to narrow.

"I used to be a Missouri beer drinking boy," he said, laughing and

demonstrating the art of wine tasting. "Until Jim introduced me to good wine."

Jim Holmes is William's Kiona Vineyards' partner. Together, they and their families own and operate what is

reported to be Yakima Valley's smallest winery.

The partners, who still work full-time as engineers, made their first wine only about four years ago. Actually, their growing of grapes and making of wine is a "hobby gone wild," Williams said.

for production.

Williams said that they started their adventure "not knowing anything about farming."

"I'm not sure I still do," he added, laughing.

Their success has been notable, however. Of the 12 wines they have produced so far, 10 have won a prize and the other two were not entered in any contest.

Their 1982 Merlot Rosé won the Governor's Trophy for red wine at the Central Washington State Fair last year—a first for a rosé.

"It is probably one of the hottest selling rosés in the state," Williams said. "The Merlot Rosé is one of the most fun things we've done. We made it on a lark."

The purchaser they had lined up for their Merlot grapes that year decided not to buy, Williams explained. "So, it was either make juice or wine," he said.

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Kiona Winery's new label. The drawing symbolizes the hills near where the Kiona grapes are grown. Kiona, in local Indian dialect, means "brown hills."

And although their wines have already won some prestigious awards, neither plans on giving up their engineering profession.

"I've got an interesting job and an interesting avocation," Williams said. "Either one gives a release from the other. It is sort of the best of two worlds."

The Holmes and Williams planted their first grapes in 1974 in what Williams calls "a sort of unique growing area." The vineyards are located in the eastern end of the Yakima Valley near Benton City, protected by the "brown hills" which Indians called "Kiona."

John and Ann Williams' basement serves as the wine-tasting room, and Jim and Patty Holmes' garage is used



Winning Wines

"The taste was a complete surprise to us. It has a nice flavor—crispy. It's not an alcoholic Kool-aid."

Williams' favorite wine, however is Lemberger. Kiona Vineyards released the first Lemberger wine in the United States in 1980. The winter-hardy Lemberger grapes make a fruity, full-bodied wine, he said.

"Every winemaker has a different idea what a good wine is," Williams said. "And at our winery, someone may not like the style of our wine. But there'll never be a bad wine under our label."

"We're proud of our quality of wines and I think that shows up in the wines themselves."

John and Ann Williams' son, Scott, began working full-time for Kiona as the cell master and vineyard manager this year after managing vineyards for investment firms since 1980.

The younger Williams believes that the quality of the Kiona wine is a reflection of the area.

"The Yakima Valley is probably one of the best wine regions in the world," he said. "But we have to earn that reputation. In 10 years, I think we'll be known as one of the best regions."

Controlling the quality of grapes is a major factor in producing good wine, his father said.

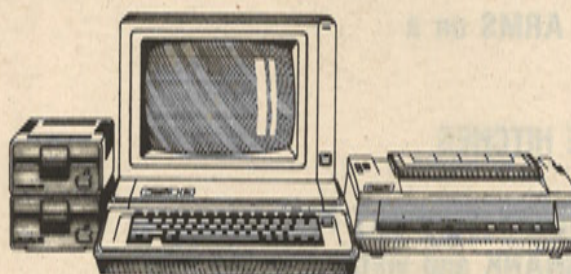
"Ninety-five percent of what you get in a wine is what you harvest out there,"

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# grapes into award-winning wines

he said. "The other five percent is taking care of it."

"If the fruit tastes good, the wine will."

Williams said their 30 acres of vineyards (20 in production now) were planted with the idea of having a winery.

"A lot of people going into the wine business this year and the year before did because they couldn't sell all their grapes," he said.

"There is a lot of difference in making a winery out of necessity instead of a

winery by design."

The grapes are analyzed first, he said, and then the wine is determined.

From fertilizer to French oak barrels, Kiona Vineyards takes special care in producing its grapes and wine.

For example, the vineyard limits crop production through pruning.

"There are about as many methods of pruning as there are farmers,"

Williams said. "Ours is probably a more difficult method, but it has proved successful in the grapes' quality."

Also, their trellis system is "uniquely different," he said. The

grapes are grown on high trellises in narrow rows.

Williams admits that they are still learning. "I think if we get to the point when we are not apprehensive about what we are doing, we will make a mistake," he said.

And, he added, they refuse to compromise the quality.

"One of our goals with Kiona is to build a reputation of fine quality wines," he said. "When you buy Kiona, you know you buy a quality wine."

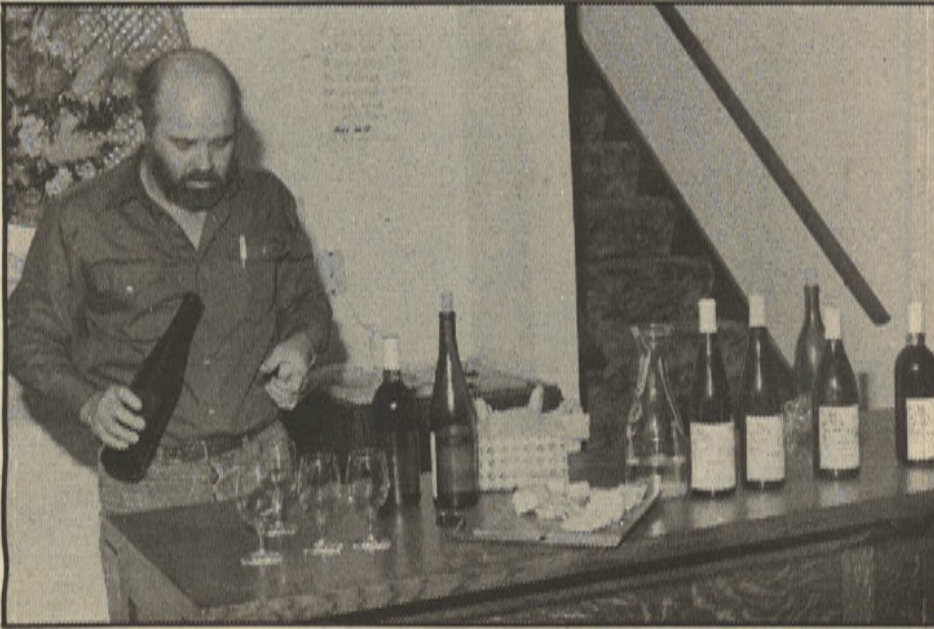
Kiona Vineyards produced about 16,000 gallons of wine last year. It hopes to eventually produce 25,000 gallons, marketing it in select places such as Washington, D.C., and New

York, as well as in this state.

Under the label are White Riesling, Chardonnay, Cabernet Sauvignon, Merlot, Chenin Blanc and Lemberger wines. Kiona wines can be tasted daily from noon to five in the tasting room between West Richland and Benton City.

The road leading to this small winery is a bit rough, but Kiona Vineyards "tries to present an atmosphere where you enjoy wine--and hopefully remember the label and taste," Williams said.

And, as the Kiona Vineyards' saying goes: "A country road, like a good wine, hopefully improves if given some time."



John Williams in the tasting room in the basement of his house.

## Foster Creek Conservation District Tour set for June 9

No-till wheat seedings, high elevation orchards and orchards developed out of sand dunes will be some of the areas visited during a conservation tour in the Dyer Hill and Brewster area June 9.

The farming and ranching operations and conservation measures tour is sponsored by the Foster Creek Conservation District in Douglas County.

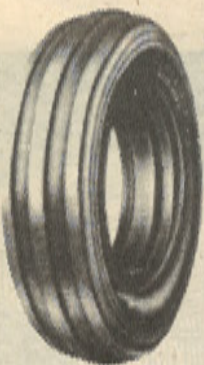
Historical facts and other items of interest will also be pointed out along

the way.

Buses will leave at 8 a.m. from the Soil Conservation Service office in Waterville and at 9 a.m. from the Post Office in Mansfield. The tour will conclude by 3:30 p.m.

Transportation is arranged through a bus chartering service. Because of limited district funds this year, an admission charge of \$7.50 a person or \$20 an immediate family will be charged.

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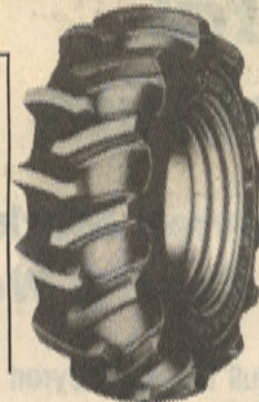
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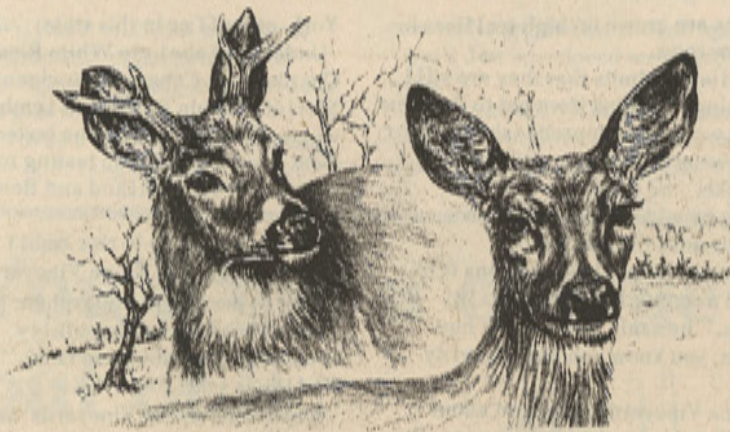
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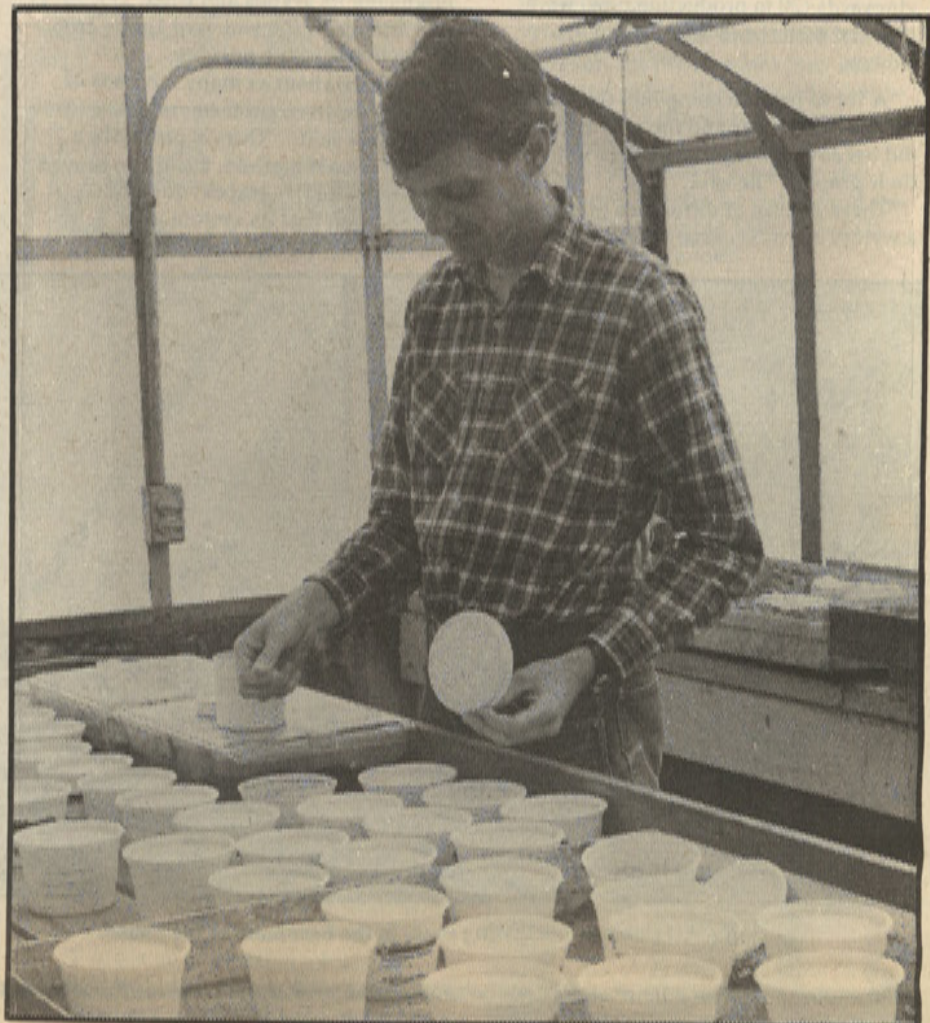
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## The Earwig Hotel

Continued from page 1

"However, if pesticides become ineffective because of genetic resistance--more of these things may become popular."

Dr. Carroll's findings will be published in the "Journal of Economic Entomology" sometime this year.



Dr. Devin Carroll feeds dog food to the earwigs in his lab at the Washington State University Tree Fruit Research Center in Wenatchee. Dr. Carroll is studying the biological control of apple aphids. Story begins on page 1. Additional story is printed on page 11.

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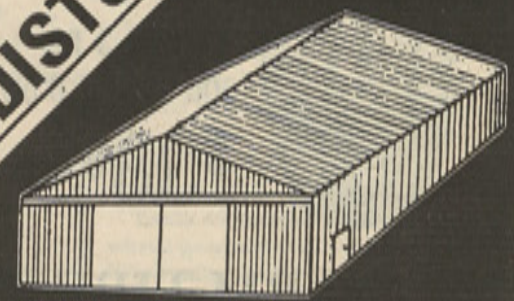
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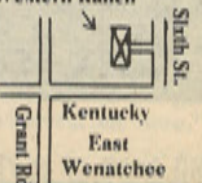


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## From the Field

# Gordon Brett--proud, but concerned, to be a farmer

Management is a key to successful farming, as demonstrated by Douglas County wheat grower Gordon Brett. Brett and his wife, Della, a nurse's aide at Eye and Ear Hospital in Wenatchee, have a son, John, in the first grade.

Printed on Gordon Brett's hardhat are the words, "I'm proud to be an American farmer."

Brett, a grain grower on Badger Mountain in southern Douglas County, wears the hat during the days he works construction.

The reason for the two jobs, he said, is a matter of economics.

The construction job "gives the extras--the things \$3 wheat won't buy," he said.

Brett took over his father's farm in 1970 after attending Wenatchee Valley College and Washington State University.

For the last seven years, he has

"The long days don't bother me a bit.

It's the short nights in between that gets me down."

worked in construction as a union laborer. He takes five weeks off in the spring and from July to fall to tend to his farming. He also finds it necessary to work some evenings and early mornings in the field before his construction job begins.

"The long days don't bother me a bit," he said. "It's the short nights in between that gets me down."

Recropping, air seeding, terraces and dams are some of the practices Brett has implemented on his farm of 1,350 acres.

"I think farmers are going to have to look at the economics of everything they do to make sure it's going to pay its way," Brett said.

One problem some farmers are facing is that absentee landlords do not always understand the changes in farming practices, he said.

"I have had farmers tell me that they'd like to try recropping, but their landlords won't let them," he said.

At this time, Brett is leaning toward a three-year rotation--winter wheat, spring barley and summer fallow--for some of his land. The Federal Farm Program and the high moisture in the last few years have partially determined this rotation.

"It varies year to year," Brett said. "It depends on government programs and spring moisture."

The Badger Mountain farmer began recropping in 1980.

Because recropping allows Brett to crop about two-thirds of his ground each year, instead of half, his annual net profit has been higher.

"I've cut down drastically on my tractor hours because I've cut down on my summer fallow," he said.

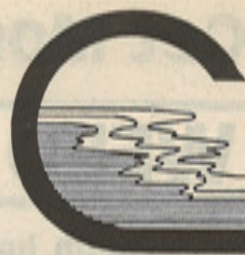
Under a conventional system, Brett spent about one tractor hour on each acre cropped during the year.



Gordon Brett working with his air seeder

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## From the field continued from page 9

Now, combined with the use of an air seeder, he spends about one hour on two acres.

"The air seeder is a more versatile tool," he said. "With it, I combine three separate operations--seeding, cultivating and fertilizing--into one operation."

He has also custom-seeded about 2,000 acres during the last three years.

"I wanted to have a drill that would seed through almost any condition--through heavy straw, rocks, conventional summer fallow--and be easy to transport," Brett said.

"The air seeder is new to our area," he added. "But not to Canada and Australia. It is gaining acceptance here."

Recropping and air seeding also appeal to Brett because of his conservation beliefs. There is a lot less soil erosion, he said, on recropped ground.

"Recropping has also helped alleviate a lot of my cheatgrass problem," he added.

The wheat grower just finished serving 12 years on the South Douglas Conservation District Board. In 1982, he completed a 10-year plan calling for about two miles of terraces and two dams on his ranch.

The terraces have also forced him to fall-chisel on the contour on his rolling fields--another good conservation practice.

Although he sees less erosion with the terraces, contour farming and recropping, Brett does not expect to

recrop every year.

"Recropping is not practical, in my opinion, if we get dry years," he said. "And I think we will be lucky to get a couple more wet years before it starts tapering off into some dry years again."

The average annual rainfall for his area, he said, is only 9 to 10 inches. This crop year, some areas in the county have up to seven inches more than normal.

Dry years and ripe grain at harvest have also been a concern to Brett in the event of fire. It was through his efforts about three years ago that 27 sections of "no-man's land" (land without fire protection) was added to fire districts.

In the near future, Brett is looking to increase home storage on his ranch. He plans to add a 5,000 bushel grain bin to the 22,000 bushel capacity he now has.

The home storage is needed, he explained, because there is no elevator close by.

"The net is so much better with home storage on barley if you can sell to feed lots," he said. The feed lots will pick up the barley at his farm, saving trucking it to an elevator.

Marketing your crop is more important now, he said, than when his father farmed under conventional tillage and wheat prices didn't change 25 to 30 cents a bushel a year.

"Overproduction and oversupply have got to be concerned," he said. "And if we end up with some drier years and start cutting 30-bushel winter wheat, \$3 a bushel wheat is not going to make it."



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## Peach trees may help growers control harmful apple aphids

Peach trees may aid a grower in keeping apple aphids from hurting his apples, according to Dr. Devin Carroll of the Washington State University Tree Fruit Research Center.

(See story on page 1 about his work with earwigs and apple aphids.)

The life cycle of an aphid, and their relationship to parasites and predators, is complex, he explained.

Apple aphids are not the only species of aphids found in an orchard. There are also the apple-grain aphids, the rosy apple aphids and the clover aphids, for example, which can be indirectly beneficial to the control of apple aphids.

The apple-grain aphid lays its eggs in the fall on apple trees. After two or three generations in the spring, it develops wings and flies away to wheat without damaging the apple tree.

Apple aphids, however, stay on the apples during the summer and are much more damaging.

The rosy apple aphid stays longer than the apple-grain aphid and sometimes is present as late as July. Its summer host is the weed, pantain. Because it can cause gnarling in the fruit, the presence of one or two rosy apple aphids can cause the fruit to be culled. Generally, these aphids are controlled through delayed dormant sprays.

### Welders Shop

Continued from page 4

Were there any other problems?

Well, we could get into hydraulics. We had one set of controls to handle two different operations, but it would take a whole book to describe that. If readers need information on that, they should call us. Also, it should be noted that this equipment modification just represents a quick overview so people can realize the potential there is for improving one's operation without buying equipment.

The clover aphid is not a problem on apples. Although it lays eggs on apple and wild hawthorn trees, it moves on to clover for the summer.

Along with studying these aphids, Dr. Carroll has been studying parasites, which he calls "aphid wasps." The parasite lays its eggs in aphids. When the larvae finishes eating the aphid from the inside, it normally builds a tent-like cocoon underneath the aphid and pupates. But when the apple aphid is the host, this usually does not occur. Instead, the larvae dies along with the aphid.

Therefore, alternate hosts are needed to keep a population of the "aphid wasp" in the orchard. Apple-grain, rosy and clover aphids can serve as alternate hosts because the larvae will emerge from these aphids.

Dr. Carroll found that because this parasite often overwinters in peach orchards, feeding on green peach aphids, and spends its summers using the same aphid on weeds, better control of the apple aphid might be accomplished if there were more peach trees.

A study was made on this at four sites last fall, including Wenatchee and Manson. There were plenty of potential aphid hosts in apple orchards at all sites, but few parasites at Manson, which has few peach trees.

There is speculation that control might be improved in the Lake Chelan and Okanogan areas if there were more peaches, Dr. Carroll said.

### Lind Field Day

The new Lind Research Unit will be dedicated during the Lind Field Day on June 21.

Registration at the research unit will begin at 9 a.m. and tours will begin at 9:45 a.m.

Among the places to be visited are weed control plots, fertility plots, and winter wheat, spring wheat and spring barley variety trial plots.

## Futures still await approval

Trading of white wheat futures on the Minneapolis Grain Exchange is still waiting for final approval by the Commodity Futures Trading Commission (CFTC), according to Tony Dirks, president of Marketing Services, Inc., and Northwest Hedging in Ritzville.

Once the proposal is approved, it will take about two weeks for trading to begin on the exchange, Dirks said.

The CFTC approval is expected to be made sometime between July and August 1, he said.

White wheat producers now market their grain either by cash sale or

forward contract. If the futures contract is approved, farmers can hedge on the futures market.

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### CORRECTION

In the May issue of Barnes Farm & Orchard News, a classified advertising an Orchard Master Weed Sprayer should have read \$1495.00 for the price. Barnes Farm & Orchard News apologizes for any inconvenience this may have caused.

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## Alex McLean working for domestic wheat promotion

For the next two years, Alex McLean of Mansfield will help promote the domestic use of wheat products by serving on the Wheat Industry Council.

McLean was appointed this spring to the national council by Secretary of Agriculture John R. Block.



Alex McLean

The 20-member council administers a national research and nutrition education program for wheat and wheat foods. Membership is composed equally of wheat producers, processors, end-product manufacturers and consumers.

McLean attended his first Wheat Industry Council meeting in Washington, D.C., last month.

The council is just starting its fourth year with a total budget of about one million dollars. The funds are collected from 530 end-product companies, such as large bakeries, who pay a penny a 100-weight of flour used. The council can collect as much as five cents per 100-weight of flour by law.

Part of McLean's duty on the council is to make sure the manufacturers received the most promotion for their dollars, he said.

"Some of my job is also to prevent duplication of efforts," he said.

One way he hopes to accomplish this is by encouraging state wheat associations to work together.

The Douglas County wheat grower represents the Western region of the United States.

"Ultimately, we are trying to increase the domestic consumption of wheat and wheat products," McLean said.

A lot of people, he added, have felt that consumption couldn't be increased. Myths have also added to the problem, he said.

For example, white bread with additives is just as nutritional as whole wheat bread, McLean said. "We hope to change the attitude that any kind of 'additive' is bad," he said.

The council also hopes to educate people that wheat calories are not as fattening as some of the other calories people consume.

"We think domestic use can increase if we can get some of these myths changed," McLean said.

The council hopes to accomplish this through hiring professional nutritionists to promote wheat and its products on radio and television talk shows and news programs, newspaper and magazines, pamphlets and other educational promotions.

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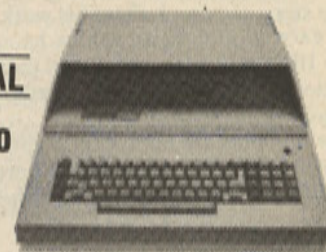
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