

## Proper sanitation and a clean refrigerator prevent micro-organisms

In the last edition of Spilyay I wrote about the problems of E. coli bacteria in hamburger. Since then we have seen many articles and television stories about the problems in our neighboring states of Washington, Idaho and Nevada. They stressed "Get the red out" when you cook hamburger to well done to be sure to kill bacteria.

But it is important to understand more than just catch phrases in order to protect our families and the tribes. Not only food handlers need to learn about unhealthy conditions, we all need to know how they affect us and how to prevent them.

When we explain the reasons for proper sanitation in the home and in concession stands at powwows, we remind people that micro-organisms spoil food and make people sick. Some micro-organisms produce acids which sour the food; others produce long chains of carbohydrates that are slimy. Other micro-organisms from protein produce a foul odor and some discolor food.

Food is considered spoiled when an undesirable change in color, flavor, odor or texture has developed. Insects like weevil, silver fish and cockroaches can also spoil food. Natural enzymes in fruits and vegetables also cause over-maturing which leads to spoilage unless the foods have been blanched or heated to destroy the natural enzymes.

Shelf life refers to the length of time a food remains palatable - from the time it is harvested until it is eaten. That is why labels have the shelf-life marked on them - "use before such and such date."

One curious thing about micro-organisms is how fast they grow. Some bacteria need only 9 minutes

to double in number. Others need about 4 hours to adapt to the environment before they begin rapid growth. If conditions are favorable, like warm temperatures, plenty of moisture and an adequate supply of food, bacteria grow very fast.

This chart will show you what happens as each generation of bacteria multiplies. You start with 1 bacteria, and in 24 hours you have 128 bacteria.

In about 2 days you have 4096 bacteria. That's the 13th generation of 1 bacteria that you started with 52

### How Microorganisms Grow

#### Start with One Organism...

Generation	Number of Bacteria
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512
11	1024
12	2048
13	4096
14	8,192
15	16,384
16	32,768
17	65,536
18	131,072
19	262,144
20	524,288
21	1,048,576
22	2,097,152
23	4,194,304
24	8,388,608
25	16,777,216
26	33,554,432
27	67,108,864
28	134,217,728
29	268,435,456
30	536,870,912

hours ago.

In 4 days, the number of bacteria will reach 33 million bacteria.

If you had a fast growing bacteria which double in 9 minutes, the number is higher with 200 million bacteria in only 4 days.

So it's important to keep beginning levels of bacteria very low. A food product that starts with 100 micro-organisms per gram may have a shelf life of 12 days before it develops odors, slime and spoilage. But when the food starts with 5,000 micro-organisms per gram, the shelf life of the food may be shortened to 7 days.

If you wonder how much one gram is, 28 \$1-bills weigh one gram or one tortilla weighs one gram.

The important thing from this article is that unhealthy conditions have lots of bacteria growing, and growing rapidly. Bacteria from dogs, cats and tracked in mud from the barn yard. You can control the growth of bacteria by good personal hygiene, sanitize equipment, control temperatures where food is stored and use

chlorinated water where possible.

After shopping for food, be sure not to put bags of groceries next to the motor unit in the van. Go home promptly after buying perishable foods rather than leave them in a hot car.

Keep food in a clean refrigerator; wash it once a week with hot soapy water and rinse with hot water with baking soda to get rid of bad odors in the frig. You can leave an opened box of baking soda in the frig to prevent odors between washing.

Sterilize containers that contained spoiled food by washing in hot soapy water and rinsing with scalding water with a 1/4 cup of bleach for 5 minutes. Then rinse with clear water.

Purify cutting boards where you cut protein products like meat, fish and cheese by scouring with bleach and an old toothbrush or a scrub brush. Rinse thoroughly with clear water to remove the chlorine.

These steps will lead of healthier food and healthier homes for your family.



Information provided by:  
Warm Springs OSU  
Extension Office  
1110 Wasco Street  
553-3238

## Art's Class

is now taking members to join.

Please come on any Wednesday to the 4-H Center from 3:30-5:00 p.m.

ALL AGES ARE WELCOME!!

You can help make your school beautiful and learn how to design large murals.

For more information call OSU Extension at 553-3238 or call Art at 553-1543.



## Do you burn wood?

### Ashes a source of nutrients

This winter's cold weather has caused homeowners to burn more firewood than last year. Therefore, more ashes have been produced. What can you do with all those ashes?

Sprinkle them on your lawn, says Don Horneck, senior research assistant at Oregon State University's (OSU) soil testing laboratory.

Ashes are a source of nutrients, especially potassium and zinc.

"Ashes are a bit unsightly, but they make a good cheap source of nutrients for your lawn, especially if you remove lawn clippings after mowing," says Horneck. "Most lawns have low potassium levels because most people remove their clippings, so lawns can benefit from an application of ash."

Usually the garden has already had enough fertilizer applied that it doesn't need additional nutrients from ashes, he added.

In western Oregon, most home owners also need to raise the pH level of lawn soil.

"Wood ashes are an effective way to make your lawn less acidic," he says. When using wood ashes from the fireplace or stove, Horneck recommends keeping the ashes as generic as possible. Paper ash is usually no problem, but the glue used in cardboard boxes contains boron, which can be toxic to plants in large amounts.

Wood ashes can be applied every year if a soil test indicates the need for it, says Horneck. But, if potassium levels are too high, he recommends not applying any ash for three to five years.

Apply no more than 10 to 15 pounds of ash per 1,000 square feet of lawn. At high levels, ashes can be toxic.

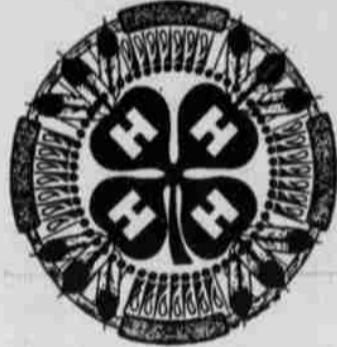
"Wood ash contains nutrients from a large amount of wood biomass," he says. "Metals like cadmium and zinc are concentrated when wood is burned. Too high a concentration of some metals can be harmful, but would only occur with excessive application of ash over an extended period."

### Speedy Salmon Supper

- 1 pint canned salmon
- 1 can (10.75 oz.) condensed cream of celery soup
- 1 package (10 oz.) frozen peas, cooked and drained

Drain and flake salmon, reserving liquid. Combine salmon liquid with soup in saucepan. Heat to a boil, stirring. Fold in salmon and peas. Heat through. Serve over rice, toast, biscuits, waffles, or fry bread. Makes 4 servings.

## The clover speaks



### U of O tour scheduled

The time is fast approaching when the residents of Jefferson County and Warm Springs open their homes for students from the University of Oregon.

Students who are attending the University of Oregon from countries around the world are given the opportunity to tour parts of Oregon they may not otherwise see. Students get a chance to spend a couple of nights in our homes, this enables us to share a bit of our living styles with them.

Jefferson County/Warm Springs 4-H program has sponsored the U of O tour successfully for 14 years. We

are always considered a favorite stop by the students.

This year host families and students will look forward to attending the potluck dinner and mini powwow at the Warm Springs Agency Longhouse. A goal this committee has been working towards and is glad to have meant.

We need 25 host families for their arrival on Monday morning March 22 through Wednesday morning March 24 when they depart for Hood River.

Please contact Liz Blann at 475-3808 or Carol Stevens at 553-3238 on or before Wednesday March 17, 1993. Thanks for your support.

### Leaders needed for 4-H

We would like to extend an invitation to any community member who would like to lead a 4-H project to stop by the new 4-H office located in the Education Center at 1110 Wasco St. Crystal Winishut will be glad to answer any questions you may have.

### Attention 4-H leaders!!

Please call or stop by the 4-H office with your suggestions for leadership workshops ask for Carol Stevens 553-3238.

### Workshop offered

Oregon State University and Education Services Program in conjunction with the COCC Redmond Skills Center will be offering two free workshops for Warm Springs community members during the month of March. The instructor is Loretta Slepikas M.A. who is co-director of the Redmond Skills Center which is a program designed to serve unemployed or underemployed adults in the central Oregon area.

The two workshops will be:

#### March 11, 1993

10:00-12:00—How to Write a Resume

1:00-3:00—Interview Skills

Workshops will be held on the top floor in the training room at the Education Center.

#### March 16, 1993

10:00-12:00—How to Write a Resume

1:00-3:00—Interview Skills

Workshops will be held on the main floor in the training room at the Education Center.

Workshops are limited to 25 people per session.

Please sign up with Sheila Nelson at the OSU Extension Services office located at the Education Center, 1110 Wasco Street.

For more information call Carol Stevens at 553-3238 or Myrna Courtney at 553-3311. They will be glad to answer any questions you may have. This is a great chance to polish skills and get an idea of what employers are looking for in prospective employees.

## Stockman's Roundup



By Bob Pawelek  
OSU Extension Agent  
Livestock and Range

### Heifer Selection

Interested in improving the reproductive efficiency of your cow herd? The easiest place to start is by developing good replacement heifers.

There are actually three phases of heifer development: 1 Pre-weaning; 2. Weaning to breeding; 3. Breeding until calving.

Each of these phases is extremely important. But since the weaning to breeding phase is at hand on spring-calving operations, let's focus on it. The key to getting heifers bred in a short period of time is proper development from weaning until breeding.

### Weaning to Breeding Management

**Use Sire EPDs As A Selection Tool**—When sires of replacement heifers can be individually identified, you can genetically design replacements for the cow herd through the use of Expected Progeny Differences (EPDs).

For example, selecting heifers out of bulls that have high maternal values (weaning growth and milk) is one step toward improving production potential. You'll also want to

consider EPDs for birth weight and calving ease. Many of the breed associations are assembling EPD information on calving ease.

Coupled with birth weight, it can be a very useful tool in alleviating calving difficulty.

**Set Weight Gain Goals**—A replacement heifer's development prior to breeding has a profound impact on her future productivity. In order to breed as a yearling, a replacement heifer needs to weigh 65 to 70 percent of her expected mature weight. Heifers should gain 1 to 1.5 pounds per day from weaning to breeding, depending upon their weaning weight and length of the feeding period prior to breeding.

Usually, this means the average British breed heifer will need to gain about 250 pounds in order to weigh the 600 to 700 pounds in order to weigh the 600 to 700 pounds necessary to begin cycling. With the larger framed European breeds and crosses, a target breeding weight of 700 to 800 pounds is usually necessary. Your veterinarian may recommend use of a growth promoting implant at weaning to help your heifers reach their breeding weight goals.

**Monitor Rate of Gain**—Puberty in heifers is a function of breed, age and weight. Research has clearly illustrated how rate of gain from weaning to breeding influences age of puberty. Considerable variation exists regarding the onset of puberty in crossbred heifers as influenced by breed.

**Manage Heifer Nutrition**—Replacement heifers need to be fed

separately from the rest of the herd. Because of their size and age, they cannot compete with the boss cows in the herd. Nor can replacement heifers, which have higher nutritional demands, be expected to efficiently utilize poorer quality forage and still breed as yearlings.

**Breeding Management**—It's best to have your replacement heifers developed to cycle early enough that they can be bred three to four weeks before the cow herd. Your veterinarian may recommend ways to accomplish this. The stress of calving is greater on heifers than older cows, and more likely accompanied by calving difficulty. Breeding replacement heifers one heat cycle earlier than the mature cows offers several benefits:

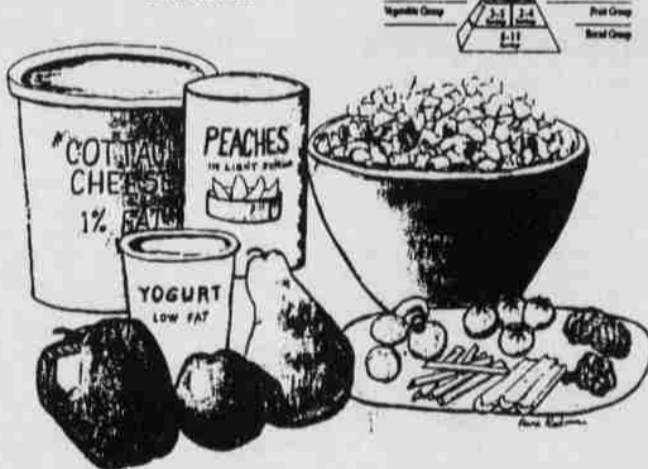
- It allows you more time to closely monitor heifer calving.
- Heifers get the extra time they need to start recycling and breed back "in sync" with the rest of the herd.
- Because their calves are older at weaning, they've had a chance to put on an additional 30 to 45 pounds. This helps make your total calf crop more uniform in size.

If it is impractical to breed replacement heifers prior to the rest of the cow herd, you should then plan a very short heifer breeding season. Utilizing a short breeding season (35 to 45 days) ensures that you are keeping fertile replacements that conceive promptly. This also will result in a short heifer calving season—allowing you to give them more attention.

Adapted from "Herd Health Partners," Syntex Animal Health.

## Tips for the dieter: plan allowable treats

Choose nutritious snacks — mini meals.



When you're on a diet, there are times when the food choices seem unappetizing. You might be able to spice up the diet if you knew the calories, fat and sodium content of some Muffin Munchers. These varieties for three commercial products may help you plan an allowable treat. Be proud of yourself for your efforts to stay within your restrictions.

### Batter Breakdown for Muffin Munchers

Type of muffin	Size (oz)	Calories	Fat (gm)	Sodium (mg)
<b>BRAN</b>				
Dunkin' Donuts Bran	3.6	310	9	560
Mister Donut Raisin Bran	3.9	418	13	692
Mister Donut Good for You Oat Bran	4.4	436	12	646
Sara Lee Raisin Bran	2.5	220	7	400
Sara Lee Oat Bran	2.5	210	8	320
<b>CORN</b>				
Dunkin' Donuts Corn	3.3	340	12	560
Mister Donut Corn	3.3	354	15	518
Sara Lee Golden Corn	2.5	260	14	160
<b>BLUEBERRY</b>				
Dunkin' Donuts Blueberry	3.5	280	8	340
Mister Donut Blueberry	3.5	343	13	378
Sara Lee Blueberry	2.5	220	12	140
<b>BANANA</b>				
Dunkin' Donuts Banana Nut	3.3	310	10	410
Sara Lee Banana Nut Bran	4.0	350	18	250

Don't let so much reality into your life that there's no room left for dreaming.