



SACRAMENTO VALLEY PRUNE NEWS

A Regional Newsletter of the UC Cooperative Extension Prune Advisors

Volume 4: 4: Fall 2007



October, 2007

Upcoming Meetings:

DATE	PROGRAM	LOCATION	CONTACT
Oct. 25	Sutter/Yuba Spray Meeting	Yuba City, CA	(530) 822-7515
Oct. 31	Pruning Field Meeting	Yuba City, CA	(530) 822-7515
Nov. 1	Sutter Co. Ag Grower Meeting	Yuba City, CA	(530) 822-7503
Nov. 8	2007 Prune Crop Review	Yuba City, CA	(530) 822-7515
Nov. 14	Sutter Co. Ag Grower Meeting	Yuba City, CA	(530) 822-7503
Nov. 29	Sutter Co. Ag Grower Meeting	Yuba City, CA	(530) 822-7503
Dec. 6	Sutter Co. Ag Grower Meeting	Yuba City, CA	(530) 822-7503

PRUNE ORCHARD MANAGEMENT PRACTICES TO CONSIDER IN THE FALL

- **APHID MANAGEMENT:** Prune aphids move back into orchards by mid-October. Consider using a fall spray to control aphids for the next season. [See article in this newsletter.](#)
- **DORMANT SPRAY OPTIONS:** Monitor each orchard in late fall or early winter to find out if a dormant/delayed dormant spray is needed for scale control. Call me (Franz at 822-7515) or look on the web at www.ipm.ucdavis.edu and click on “agriculture and floriculture” and then “prunes” to get to details of how to take and evaluate a dormant spur sample.
- **ORCHARD FERTILITY:** Plan fall fertilizer program. Fall is the best time for soil applied potassium fertilizer in flood irrigated blocks. Once leaf drop has started, soil nutrient uptake - especially nitrogen - decreases rapidly. Dormant trees absorb almost no nitrogen.
- **PRUNING:** Pruning is one of the most important and expensive activities in prune orchard management. Eliminating pruning can be a recipe for lots of small prunes, unless the orchard is carefully thinned. [See brief article in this newsletter, and notice of Pruning Field Day.](#)
- **TOPPING TIMING:** A study by Bill Olson, retired UC Farm Advisor in Butte County, showed less regrowth from fall (September) vs. winter or summer topping. Topping in the fall may be a way to reduce shoot growth in the spring. Another study is underway in Glenn County to evaluate topping timing. If you would like your orchard to be part of a topping timing trial in Sutter or Yuba Counties, please give Franz a call at 218-2359.

- **MANAGE RODENTS:** Gophers and especially voles can damage an orchard if not managed in the fall. Weedy cover gives voles the perfect “home” from which to feed on bark and possibly girdle trees.
- **CLEAN UP ORCHARDS:**
 - Cut out *Cytospora* cankers and remove infected wood from the area of the orchard.
 - Clean up “barked” trees damaged by shaker. Trunk/limb damage from harvester can result in *Ceratocystis* canker infection and possible tree death.
 - Mark dying or weak trees for removal. Backhoe out old trees, making sure to get as much of the roots out of the hole as possible.
- **IRRIGATION:** Prune trees need some water after harvest. Monitor orchard water status and irrigate if needed. Trees not irrigated between preharvest cut off and winter rains can become very dry and more vulnerable to spread of *Cytospora* canker. In addition, prune trees not irrigated after harvest can produce small fruit buds.
- **ORCHARD FLOOR MANAGEMENT:** If you flood and berm irrigate, consider not discing after the last irrigation -- just knock down the berms. The ground cover will grow back faster without discing, and bare soil absorbs rainwater less readily than grass/weedy/cover cropped ground. This means more runoff – and more potential for pesticide runoff following dormant spray – from disced orchards than undisced ground. Not discing can mean more mustard in the late winter.
- **COVERCROP MANAGEMENT:** Plant cover crop now if this practice is part of your orchard management program.

NEMATODE PROBLEMS IN PRUNE PRODUCTION

Richard P. Buchner, UC Farm Advisor, Tehama County

Michael V. McKenry, UC Extension Specialist, Nematology

Nematodes are microscopic, unsegmented roundworms which occur nearly everywhere. Food sources include bacteria, protozoa, earthworms, flowering plants, trees, fish, wild and domesticated animals and man. Several nematode species live in soils and feed on or within plant tissue. These are the plant parasitic nematodes. They utilize a spear or stylet at the head end to feed on plant tissue. They can migrate and reproduce anywhere in the root zone but tend to be most plentiful at the 6 to 36 inch depths. Plant parasitic nematodes can cause significant damage to prune and other orchard crops. Damage from nematode activity may include:

- 1) Plant parasitic nematodes weaken trees by damaging root tissue. Severity is due to nematode species, population level and soil type combined with orchard management practices.
- 2) Ring nematodes are typically associated with bacterial canker.
- 3) Plant parasitic nematodes may transmit virus.
- 4) Plant parasitic nematodes are almost always involved when an old orchard is removed and new trees are planted. The replant problem is not completely understood, but plant parasitic nematodes are the component of this problem that can cause lifelong, low level debilitation of an already restricted root system.

If prune growers are observing any of these problems and/or plan to replant, consider a soil analysis to check for ring nematode, *Mesocriconema xenoplax*, root lesion nematodes, *Pratylenchus vulnus*, *Pratylenchus penetrans*, *Pratylenchus thornei*, *Pratylenchus neglectus*, or *Pratylenchus scribneri*, dagger nematode, *Xiphinema americanum* or pin nematode, *Paratylenchus hamatus*. There can be other genera and species of plant parasites in your orchard but these are the most common. Samples need to go to a lab with experience in identifying nematode species.

Prune growers need to be concerned about ring and lesion nematodes particularly when they replant after any perennial crop. Damage caused by *P. penetrans* is unknown but it occurs at high enough population levels to be associated with damage.

In prune orchards it is common for ring and lesion nematodes to occur together, but the damage they cause is quite different. The preferred feeding site of ring nematode is the smallest feeder roots. Adult stages are sedentary but smaller, younger stages are capable of moving through soil. It builds to highest population levels on Marianna 2624 followed by Nemaguard, followed by Lovell rootstock. The ring nematode host status of Myrobalan 29C is unclear but it is apparently a poorer host than Marianna 2624. This nematode develops its highest population levels in highly porous soils. Sand, loamy sand, and coarse sandy loam soils that infiltrate water quickly provide its best habitat. Fine sandy loam soils that are relatively slow to infiltrate water will support this nematode but not at levels high enough to permit extensive population build-up. Clay loam soils that are well structured also provide adequate opportunity for ring nematode build-up.

Root-lesion is an endoparasitic nematode and may feed and lay eggs outside the roots or within. On occasion, roots of prune may exhibit dark lesions due to nematode feeding but by the time this damage is evident there is considerable damage already done. This nematode can often be found together with ring, but lesion nematode by itself is not a pre-disposing agent for bacterial canker. Adults, juveniles and egg stages of both these nematodes survive in soil without food for lengthy periods of time. In settings where we have killed roots of old trees with a systemic herbicide expect 5% of the original lesion nematode population to remain in soil for 5 years after tree removal.

**THE ONE BEST TIME TO MANAGE NEMATODE PROBLEMS AND REPLANT PROBLEMS IS PRIOR TO PLANTING.
EACH OF THE FOLLOWING CONSIDERATIONS IS IMPORTANT.**

- 1) Soil fumigation is relatively expensive but very effective. A proper pre-plant fumigation for clay loam soils will double cost and require more care than the same fumigation applied to sandy loam soil. Methyl bromide is the preferred fumigant for clay loam soils whereas in sand to sandy loam soils 1, 3-dichloropropene applied to well-dried soil will perform adequately.
- 2) Purchase certified nematode-free nursery stock. Nursery trees free of nematodes are a requirement in California.
- 3) Choose the best rootstock for your soil conditions. Consider soil texture, diseases and nematodes.
- 4) Post-plant nematicides that perform well in sandier soils may not be useful in clay loam soil. Thus, consider pre-plant fumigation as one of the few chemical treatments available when replanting orchards into finer textured soil.
- 5) In replant settings a first-year growth advantage is achieved by treating old trees with a registered systemic herbicide, waiting one full year, proper soil profile preparation, replanting on a rootstock with different parentage and then applying starter nutrients at time of planting. This program referred to as "starve the soil ecosystem and replant with different rootstock parentage" needs further evaluation with a wider range of rootstocks. The value of this program can be hidden by good soil fumigation. This program alone will not provide more than a 50% reduction in nematode populations, but it will provide relief from the rejection component of the replant problem. Additional steps will be needed to manage nematode populations. Additional nematode control can be achieved by selecting rootstocks with resistance to the specific nematodes.

Post-plant nematicides can improve vigor and yield of prunes that are infested with nematodes. There are some serious considerations relative to their performance.

- 1) Nematicides that rapidly degrade within 24-48 hours should not be utilized in clay loam soils. By the time the active ingredient moves adequately through soil and into soil particles the concentrations are too low to provide adequate nematode reduction. The half-life of Enzone® in soil is about 24 hours. Its use in sandy soils can provide dramatic benefit but there may be minimal benefit in clay loam soils.
- 2) The most economic procedure for delivering nematicides is via chemigation. Other delivery methods may not be economic. The chemigation process for delivery of nematicides is not the same as it is for delivery of fertilizers. For nematicides the goal is to reach as many roots as possible without experiencing excessive dilution of the product.
- 3) Post-plant nematicides may be relatively specific in their performance. Enzone® performs well against ring nematode but only short-term relief is achieved against root-lesion. In field settings DiTera® appears to perform best against root-lesion nematode.

For additional information on the replant problem try Dr. McKenry's website: <http://www.uckac.edu/nematode/>

PRUNING AND TRAINING PRUNE TREES

Joe Connell, UC Farm Advisor, Butte County

This is a good year to dormant prune mature orchards since due to the small crop in certain areas the stage is set in many orchards for a large crop next season. Dormant pruning renews fruit wood and moderates a heavy crop load reducing limb breakage, potassium deficiency, small fruit size and high dry away ratios. It is also the first step toward eliminating *Cytospora* cankers and the dead wood associated with them.

TRAINING YOUNG TREES: We know from research conducted by Cooperative Extension over 20 years ago in Sutter County that "long" pruning is a good way of growing large trees more quickly and improving production early in the life of the orchard. We also know that heavier or "short" pruning results in smaller branches, reduced fruiting capacity, and also increases the time it takes for trees to come into production.

The following simplified program is one way of producing large trees with good production at an early age while at the same time avoiding the complexities and problems which can arise from not heading new growth.

FOR ONE YEAR OLD TREES AT THE FIRST DORMANT PRUNING, select three primary scaffolds or branches and head them no shorter than 20 to 30 inches in length. Save thin, horizontally growing, non-competitive branches for early production. This is the normal program most prune growers follow.

FOR TWO YEAR OLD TREES AT THE SECOND DORMANT PRUNING, select two secondary branches on each primary branch and leave them long but be sure to head them at about five feet of new growth. This will give you a tree about 9 or 10 feet tall at the end of the second dormant pruning. Leaving these branches five feet long is the key to good spur formation and cropping in the fourth and fifth years. Save thin, flat growing, non-competitive branches for early production. If you "short" prune these secondary scaffolds back to 20 to 30 inches in length and strip off lateral fruitwood you will not have much spur growth or early production.

Long pruning at the second dormant pruning is a key practice for training young trees. If your trees had second year growth that isn't much longer than five feet it's also important to remember that these secondary scaffolds should always at least be "tipped" when dormant to avoid setting fruit near the end of the scaffold. Untipped

secondary scaffolds can bend down dramatically with the weight of shoots or fruit and can be lost as good secondary branches if tipping is not done.

FOR THREE YEAR OLD TREES AT THE THIRD DORMANT PRUNING, finish developing the top of the tree by thinning out the tertiary branches arising from each secondary branch to a single branch and head them at 30 inches in length. You should also head any particularly vigorous lateral branches at about 30 inches.

If you have a three year old orchard that you pruned severely last winter you can still get some early production with proper pruning this winter. This winter, select one or two tertiary branches on each of your short secondary branches and head these at five feet of new growth. This will help develop good spur growth on these branches next season for cropping in the fifth and sixth years. Remember, if you continue to prune these tertiary branches back to 20-30 inches in length you will not have much crop until the sixth year.

Good production and early returns are important goals in all orchard systems. This pruning system is a simple way to help you achieve this success.

FALL SPRAY CONTROLS PRUNE APHID THE NEXT SEASON – FALL 2007 UPDATE

Franz Niederholzer, UC Farm Advisor, Sutter/Yuba Counties, Carolyn Pickel, UC IPM Area Farm Advisor, Sacramento Valley, Rich Buchner, UC Farm Advisor, Tehama County, Bill Krueger, UC Farm Advisor, Glenn County

SUMMARY: In three years (2003-2005) of University of California research, fall pesticide spray consistently controlled plum aphids (leaf curl plum aphids and mealy plum aphids) the following year, providing an option to replace the dormant spray for aphid control. Options for peach twig borer and scale control are also discussed.

The traditional dormant spray in prune orchards controls several key orchard pests including peach twig borer (PTB), San Jose scale (SJS), and plum aphids. However, dormant orchard spraying is increasingly regulated due to recent findings of dormant-season pesticides (diazinon, chlorpyrifos and others) in surface waters. If use of the dormant spray is eliminated or further regulated, prune growers have limited options for integrated pest management (IPM) of plum aphids. Registered, effective pesticides for aphid control (Asana®, diazinon, etc.) are broad-spectrum materials (non-selective poisons) that when sprayed in-season can harm beneficial insects that provide natural (and free!) spider mite and scale control. To increase prune/plum pest control options, University of California researchers and farm advisors began to field test fall (late October – November) spray timings for aphid control. Both speed sprayer and handgun, single-tree trials were conducted. Low rates of labeled pesticides (Asana®, Imidan®, diazinon, and/or Actara®) were tested. Oil was not included with pesticides treatments, as previous studies showed it did not affect aphid control, and use of oil is incompatible with zinc sulfate, a foliar nutrient commonly applied in the fall.

IN ALL THREE YEARS OF THIS STUDY (2003-2005), FALL PESTICIDE APPLICATIONS GAVE EXCELLENT PLUM APHID CONTROL THE FOLLOWING YEAR. There were distinct differences between pesticide materials (see Table 1) with the more persistent materials providing more effective aphid control. In fall, 2006, at least nine growers used Asana® (totaling over 1500 acres) in Sutter and Yuba Counties. Control was excellent in all but one field. We can't explain why control was excellent in so many orchards, but unsatisfactory in one.

BASED ON THESE CONSISTENTLY POSITIVE RESULTS, PRUNE GROWERS CAN ADD A FALL SPRAY TO THEIR LIST OF EFFECTIVE OPTIONS FOR PLUM APHID CONTROL. This spray timing is very effective on aphid -- the most important pest in plum/prune production. Fall spraying is usually easier to plan due to generally better weather

conditions at that time compared to winter, and could become the preferred spray timing for orchards on heavy ground where orchard access is often difficult during January and February.

EFFECTIVE APHID CONTROL — AT ANY TIME -- REQUIRES EXCELLENT SPRAY COVERAGE. This is especially true with the fall spray. Pesticides for aphid control should be applied to every row at a slow tractor speed (2-2.5 mph) using carefully calibrated sprayers. (The same sprayer rules should apply to dormant sprays, too.)

While the fall spray has not yet been shown to be a complete dormant spray replacement, there are **OTHER EFFECTIVE OPTIONS FOR PTB** that allow growers to avoid spraying in the full dormant season (January and February). Effective PTB control practices that compliment a fall spray for aphids include a bloom spray or in-season spray with materials that don't harm beneficial insects and mites including B.t. (Dipel®, Javelin®, etc.), Intrepid® and Success®.

WHAT ABOUT SCALE? Because spray coverage is so important to effective scale control, delayed dormant timing is still the best option for scale control. However, in our experience, few orchards in the Sacramento Valley have enough scale to justify spraying.

A DORMANT SPUR SAMPLE IS THE BEST WAY TO CHECK SCALE LEVELS. When results of this simple test show a need for scale control, high rates of oil (4 gallons/acre) can give good control of low to moderate SJS populations when applied in the delayed dormant period. An effective pesticide (Supracide®, diazinon, Lorsban®, Seize®, etc.) should be added to the tank with oil if the dormant spur samples show high scale populations. If the dormant treatment is skipped and scale are found in spring an in-season spray with oil and/or Seize® can give good scale control if necessary. Information on how to sample dormant spurs to determine if scale control is needed available from your local UC Farm Advisor or on the web at: <http://www.ipm.ucdavis.edu/PMG/r606900511.html>.

TABLE 1. PLUM APHID CONTROL MATERIALS, RATES, AND RELATIVE CONTROL RESULTS WHEN SPRAYED ONCE FROM MID-OCTOBER THROUGH NOVEMBER.

Material	Rate/acre	Aphid control
Asana®	3*-4.8 oz	Excellent
diazinon	2 pints	Poor -- Fair
Imidan®**	2.125-4.25 pounds	Good -- Excellent
Actara®	3 oz	Good (October) Poor (November)

* Below labeled rate.

** Imidan® was tested because it breaks down quickly in water and will have less impact on surface water quality and aquatic life.

2007 PRUNE CROP REVIEW MEETING PLANNED

Three crop disasters in the last four years -- where do we go from here? A meeting on Thursday, November 8, hosted by Franz Niederholzer, UCCE Farm Advisor in Sutter/Yuba Counties, will review the 2007 Prune Crop in south Sacramento Valley, and see what can be learned from the past year. The meeting is co-sponsored by Sunsweet Dryers, Inc. There will be short presentations by Franz, followed by discussions of grower experiences. There will also be a brief discussion of grower research needs, based on the experiences of the 2007 crop. Continuing ed hours for private applicators and PCAs have been requested.

The meeting will be held at the Veteran's Hall in Yuba City. The meeting will start at 10 AM and lunch will be served at noon. Credit hours have been requested from CA DPR. A free lunch will be provided to those who

RSVP by Monday, November 5. After that, lunch will cost \$14/person. Please call UCCE office in Yuba City (822-7515) to RSVP.

SUTTER/YUBA PRUNING FIELD MEETING OCTOBER 31

A field meeting to demonstrate and discuss pruning of 1st and 2nd leaf prune trees is set for 9AM on Wednesday, October 31. The location is the Wilbur Ranch's young prunes at the intersection of Pease and Stabler Roads just north of Yuba City. Please call Franz at 218-2359 if more directions are needed. The meeting will run no later than 10:30.

DIRECTIONS: To get to this location, take Hwy 99 to the Eager Road exit, just north of Yuba City. Take Eager Road east a short distance to the stop sign on Live Oak Blvd. Turn right (south) on Live Oak Blvd and take that road south to Pease – about a mile. Turn right (west) on Pease. There is a prune dehydrator on the southeast corner of Live Oak and Pease. Take Pease back over Hwy 99 and the meeting site will be on your right just past the left turn onto Stabler. Yellow meeting signs will identify the exact location.

NRCS ANNOUNCES PROGRAM SIGN-UP PERIOD

The application period for USDA's Environmental Quality Incentives Program (EQIP) will remain open until **NOVEMBER 2, 2007**. EQIP was established by the 2002 Farm Bill to provide a voluntary conservation program for farmers and ranchers to address natural resource concerns. It promotes agricultural production, environmental quality, ground and surface water quality, and conservation on private lands. Generally, 50 percent cost-share is available for a number of conservation practices. Beginning farmers or ranchers, having operated a farm or ranch for less than ten consecutive years, and limited resource farmers may be eligible for higher cost-share rates. **APPLICANTS WHO WERE NOT FUNDED IN PREVIOUS YEARS MUST SIGN NEW DOCUMENTS TO BE CONSIDERED IN THE 2008 PROGRAM YEAR BEFORE NOVEMBER 2.**

Practices that increase irrigation efficiency, such as microjet and sprinkler systems, are eligible for cost-share through EQIP. Tailwater recovery, nutrient management, integrated pest management, field borders, filter strips, and cover crops are other examples of eligible conservation practices in the valley region.

Producers in the foothills may also apply for EQIP conservation practices such as forest stand improvement, brush management for fuel-load reduction (e.g. mastication), pest management, tree planting, critical area planting, fencing, and spring development.

Applicants must qualify as agricultural producers and may be required to submit an IRS Schedule F showing a minimum of \$1,000 of agricultural products produced for two of the last five years. NRCS staff assists each producer in developing a conservation plan for their operation. Funded applicants sign contracts to complete practices in the conservation plan. Failure to complete contracted conservation practices may result in penalties and lost eligibility for future programs.

To sign up for the 2008 Environmental Quality Incentives Program in Yuba or Sutter Counties, please visit the Natural Resources Conservation Service at 1511-B Butte House Road in Yuba City or call (530) 674-1461, ext. 3, **WELL BEFORE NOVEMBER 2** to provide appropriate documentation of agricultural production, ownership, and project location before the application deadline.



2007 PRUNE CROP REVIEW MEETING

10:00 AM TO 1:00 PM, NOVEMBER 8, 2007
VETERAN'S MEMORIAL BUILDING, YUBA CITY

THREE CROP FAILURES IN FOUR YEARS.

WHERE DO WE GO FROM HERE?

Hosted by Franz Niederholzer, U.C. Farm Advisor

Co-sponsored by University of California Coop Extension and Sunsweet Dryers, Inc.

WHAT WENT WRONG? BRIEF PRESENTATIONS OF RELEVANT RESEARCH PROJECTS FROM THIS PAST YEAR, GROUP DISCUSSION OF GROWER EXPERIENCES, SUGGESTIONS FOR FURTHER RESEARCH RESULTING FROM EXPERIENCE(S) OF 2007 CROP YEAR.

FREE TRI-TIP LUNCH FOR THOSE WHO RSVP ON OR BEFORE MONDAY, NOVEMBER 5. PLEASE CALL UCCE OFFICE AT (530) 822-7515 AND LET THE CLERICAL STAFF KNOW YOU WANT YOUR NAME ON THE LIST FOR THE PRUNE CROP REVIEW MEETING LUNCH.

\$14.00 PER PERSON FOR LUNCH AT THE DOOR IF NO RSVP.

Private Applicator and PCA hours requested

SUTTER/YUBA ORCHARD SPRAY FIELD MEETING

OCTOBER 25, 2007

SIERRA GOLD NURSERIES WAREHOUSE FACILITY, 5320 GARDEN HWY, YUBA CITY

8:30	Sign-in and Refreshments
8:50	WELCOME, MEETING OVERVIEW <i>Franz Niederholzer, UCCE Farm Advisor, Sutter/Yuba Counties</i>
9:00	NEW SPRAY TECHNOLOGY DEMO AND DISCUSSION: CASE/IH AIM COMMAND™ SYSTEM <i>Robbie Ratcliff, Farm Manager/Safety Director, Sierra Gold Nurseries</i> <i>Ken Giles, Professor, Agricultural and Biological Engineering Department, UC Davis</i>
9:30	CALIBRATION BASICS AND DEMO <i>Lynn Wunderlich, UCCE Farm Advisor, Amador/El Dorado Counties</i> <i>Franz Niederholzer, UCCE Farm Advisor, Sutter/Yuba Counties</i>
10:30	GETTING THE MOST FROM YOUR PRE-EMERGENT HERBICIDE: STRIP SPRAYER CALIBRATION/SET UP. <i>John Roncoroni, UCCE Farm Advisor, Napa County</i>
11:00	CALIBRATING AN AIRBLAST SPRAYER <i>Lynn Wunderlich, UCCE Farm Advisor, Amador/El Dorado Counties</i> <i>Franz Niederholzer, UCCE Farm Advisor, Sutter/Yuba Counties</i>
11:20	“GREEN” UP AN AIRBLAST SPRAYER. LOW DRIFT IDEAS FOR CONVENTIONAL AIRBLAST SPRAYERS ➤ “Cornell donuts” ➤ Venturi nozzles ➤ Retrofit with “eyes” <i>Franz Niederholzer, UCCE Sutter/Yuba Counties</i>
11:35	DEMONSTRATION OF AIRBLAST SPRAYER NOZZLE SET UP AND EVALUATION. <i>Robbie McMurry, CURES</i>
12:00	REVIEW OF NEW REGULATIONS TO PROTECT GROUND AND SURFACE WATER <i>Jan Kendel, Agricultural Biologist, Sutter County Agricultural Commissioners Office</i> <i>Steve Anderson, Agricultural Biologist, Yuba County Agricultural Commissioners Office</i>
12:30	MEETING ENDS

Co-sponsored by UCCE, CURES, CAFF, Yuba/Sutter RCD
Sutter County and Yuba County Agricultural Commissioner's Offices

3.5 HOURS OF CE CREDIT REQUESTED

Seating: There will be some short presentations
There will be 20 camp stools available, to guarantee a seat please BYOC (Bring Your Own Chair)