

MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Agricultural Education Safety Checklist

Introduction

This safety checklist was designed to call attention to potential unsafe situations that can occur in Agricultural Education facilities. We have attempted to identify all unsafe situations as outlined in the Code of Federal Regulations – Labor the National Electric Code Handbook, and the National Fire Protection Association Handbook that might present themselves. In spite of our best efforts, we are certain that some safety aspects have been overlooked when drafting this checklist. Please keep this in mind as your review and/or use this checklist.

We realize that Occupational Safety and Health Administration (OSHA) cannot perform an inspection for schools in Missouri but common law utilizes the Code of Federal Regulations to determine negligence in the event of an accident. In addition, insurance carriers for the local school districts are aware of and can enforce the safety standards as outlined in the Code of Federal Regulations.

We encourage the adoption of this checklist and also welcome any additional suggestions that would strengthen this checklist.

MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Agricultural Education Safety Checklist

Name of School _____ Date of Check _____ State Supervisor _____

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
1. Walking – Work Surfaces					
1. Laboratory appearance neat and orderly. 1910.22(a)					
2. Aisles, passageways, and corridors free of obstructions and properly indicated. 1910.22(b)					
3. Floors free of obstructions. 1910.37(g)(4)					
4. Floors maintained in a clean and dry condition. 1910.22(a)(2)					
5. An absorbent material available for grease and oil spills on floors.					
6. Non-skid surfaces provided at stationary tools on smooth floors.					
7. Safety lanes provided around stationary tools.					
8. Walls and storage areas clear of objects that might fall.					
9. Stored wood and metal stacked safely and solidly. 1910.22					
10. Scrap wood and metal stored neatly in proper bins.					
11. Fixed stairs provided to overhead storage room(s). 1910.24(b)					
12. Stairways having more than 4 risers have a standard hand railing 30 in. – 34 in. high. 1910.23					
13. Every opening. Floor, or platform 4 ft. or more above ground level has a standard guard rail 42 in. high with an intermediate rail and toe board of at least 4 in. above the floor. Rail must withstand 200# thrust. 1910.23(b)(c)					
14. Fixed ladders meet design specifications. Rung to back clearance 7 in. maximum rung spacing – 12 in. caged if more than 20 ft. to a maximum of 30 ft. 1910.27(b)					
15. Portable ladders in good repair. 1910.25(d)(i)					
16. Portable ladders not exposed to elements, heat or dampness.					
17. Portable ladders hung or stored horizontally.					
18. All portable ladders have safety feet. 1910.25(d)					
19. All gears, moving belts, chains, and shafts, etc., are protected by permanent guards.					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
20. All ventilating fans are properly shielded.					
21. Safety hooks are used on all chains and lifting devices. 1910.179(h)					
22. Rated load plainly marked on the side of lifting equipment. 1910.179(b)(5)					
23. Fans and flywheels within 7 ft. of the floor are guarded with a guard having holes not greater than ½ in. in width. 1910.213(h)					
24. Washing facilities are provided and properly maintained					
II. Means of Egress					
1. Laboratory has at least two exits. 1910.36(3)					
2. Exit signs visible and directional exit signs provided if necessary. 1910					
3. Exit signs have letters 6 in. high. ¾ in. strip. 1910.37(Q)(6)					
4. Exit signs have 5-candle illumination. 1910.37 (Q)(6)					
5. Non-exit doors clearly identified "NOT AN EXIT" or otherwise labeled for use. 1910.37(Q)(2)					
6. Exit doors and access to exits not locked from exit side. 1910.37(f)(3)					
7. Emergency lighting for exits provided and operational.					
III. Fire Protection					
1. Fire alarm provided. 1910.36(3)					
2. Fire Extinguisher locations properly marked. 1910.157(c)(1)					
3. Maximum distance to fire extinguisher 75 ft. 1910.157(d)(2)(3)(4)					
4. Fire extinguishers of proper type. Class A – wood, paper, cloth and rubber. Recommended Extinguisher type – foam and dry chemical Class B – flammable liquid, gas, and grease. Recommended Extinguisher type – dry chemical CO ₂ , and foam. Class C – energized electrical. Recommended Extinguisher type – dry chemical and CO ₂ . Class D – combustible metals 1910.57. Recommended Extinguisher type – specific for the chemical.					
5. Fire extinguishers tested yearly. 1910.157(e)(3)					
6. Maximum height of fire extinguishers from floor to extinguisher top is 5 ft., if over 40#, 3 ½ ft. 1910.157(3)					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
7. Wool fire blanket(s) readily available. 1910.44					
8. Safety cans used for flammable or combustible liquids. 1910.106(e)(z)					
9. Combustible wastes kept in covered metal containers and disposed of daily. 1910(d)(3)					
10. Fire restraint cabinet used to store flammable liquids. 1910.106(d)(3)					
11. A non-flammable cleaning solvent is used to clean engines. Cleaning solvent has flash point of not less than 100°F. 1910.107(g)(5)					
12. Cleaning solvent vats and containers are covered and placed in a safe location.					
13. A fire procedure is provided.					
14. Spray painting is done using a charcoal mask or air pump; materials are disposed of properly.					
15. Paint spray booth has adequate ventilation. 1910.107					
16. Paint spray booth has proper (explosion proof) lighting.					
17. Explosion proof wiring within 20 feet of spray paint booth. 1910.107					
18. No open flames within 20 feet of opening of spray paint booth. 1910.107					
19. Spray paint area not littered with combustible materials. 1910.107					
IV. Medical and First Aid					
1. Emergency telephone numbers placed in the laboratory.					
2. Evacuation procedures posted in the laboratory. 1910.38.					
3. Teacher reviews procedures with students. 1910.38(e) (iii).					
4. Certified/trained person(s) available to render first aid. 1910.151.					
5. First aid supplies approved by consulting physician. 1910.151 (b).					
6. First aid supplies readily available.					
V. Personal Protective Equipment					
1. Safety test(s) administered to each student before access to the laboratory is granted and a copy of the test is retained on file.					
2. Rings and other jewelry are removed when working in the shop.					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
3. All clothing worn is free from loose sleeves, flopping ties, loose coats, etc.					
4. Long hair is controlled by use of hair net or cap.					
5. Industrial quality eye protection required to be worn. 1910.132(a).					
6. Industrial quality eye protection provided and stored. 1910.133(a) (1).					
7. Emergency shower easily accessible and functional. 1910.151.					
8. Respirators provided for areas contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors. 1910.134(a).					
9. Face shields provided for each stationary and hand held power tool. 1910.133.					
10. Bump hats or hard hats provided in areas where impact or falling object hazards exist. 1910.135.					
11. Leather gloves required for hot metal and rough work.					
12. Safety signs are displayed throughout the shop.					
13. Battery charging area will provide a functional eye wash station and facilities for flushing and neutralizing electrolyte. 1910.178 1910.151 (c).					
VI. Tools					
1. Informational safety rules posted near each stationary power tool.					
2. Stationary power tools anchored to the floor. 1910.212 (b)					
3. Each power driven tool provided with a positive "Lockout system" to render the machine inoperable. 1910.213 (a) (10).					
4. Electrical control switches on stationary power tools within easy reach of operator. 1910.213 (b).					
5. Stationary power tools equipped with magnetic starters. 1910.213 (b) (3).					
6. Stationary power and non-powered tools color coded. Yellow = adjusting, Orange = cut, crush, shock. 1910.144.					
7. Stationary tools arranged so that individuals are protected from hazards of other machines.					
8. Table saw equipped with a hood, guard, non-kickback fingers or dogs, and spreader. 1910.213(d) (e) (2).					
9. Radial arm saw equipped with hood, guard, non-kickback fingers or dogs, rotation sign, automatic return, and table extension or stop. 1910.213 (h).					
10. Installation of radial arm saws shall be such that the front is slightly higher than the rear or an automatic return device is installed. 1910.213(h) (4).					
11. Radial arm saw with danger sign affixed to the rear of the guard at the approximate level of the arbor, not less than 1 1/2" x 3/4", reading as follows: "DANGER" "DO NOT RIP OR PLOUGH FROM THIS END." The label should be colored standard danger red. 1910.213(h) (5).					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
12. Radial arm and table saws equipped with roller units or stands to assist in moving material to the saw and removal after cutting.					
13. Radial arm saw, table saw, and jointer equipped with push sticks or blocks. 1910.213(a).					
14. Band saw had an adjustable guard above the blade rolls and the blade wheels are covered. 1910.218(i).					
15. Each band saw equipped with band tension control device. 1910.213(i) (2).					
16. Jointer has an automatic guard covering all sections of the cutting head. 1910.213(i).					
17. Planer feed rolls and cutter head guarded by a hood or suitable guard to prevent the operator's hands from contacting the cutter head or in-running the feed rolls. 1910.213(n) (2).					
18. Tool kept sharp, clean, and in good working order. 1910.213(s) (2).					
19. Hand-held circular saws equipped with a pressure switch that cannot be locked in the ON position and will shut power off when pressure is released. 1910.242(1) (2) (i).					
20. Portable power tools and equipment properly and securely stored when not in use.					
21. Grinder has guards to cover the spindle ends, nuts, and flanges. 1910.215(a) (2).					
22. Grinder work rest height adjusted to center of arbor. 1910.215(a) (2).					
23. Grinder rests adjusted within 1/8 in. of the grinding wheel. 1910.215(a) (4).					
24. Grinder torque guard or spark deflector adjusted within ¼ in. of the grinding wheel. 1910.215(b) (9).					
25. Maximum periphery exposure for stationary grinder 65°. (Exposed distance between tool rest and torque guard or spark deflector). 1910.215(b) (3). Portable grinders and saws have proper shielding in position. (180° maximum exposure). 1910.243(4). Grinders, polishers, and buffers are equipped with an adequate exhaust system. 1910.94(b) (4). The grinder has a safety guard at the point of operation. 1910.215(a).					
VII. Welding, Cutting and Brazing					
1. Arc welder cables, electrode holders, and ground clamps in good state of repair. 1910.252(b) (4) (x) (c).					
2. Electrode holders hung up, and so placed and fastened securely to the cable so they do not make electrical contact. 1910.252(b) (4).					
3. Repairs made only by qualified personnel. 1910.252(b) (4) (x) (a).					
4. Welding area floor dry and free of combustible materials. 1910.252(b) (4).					
5. Fire resistant curtains or shields used around arc welding areas or booths. 1910.252(b) (4).					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
<p>6. Arc welding helmets and welding goggles with tempered safety glasses or proper shade and hardened cover lens in good condition. 1910.252(b) (i).</p> <p>Shield metal-arc welding – 1/16-5/32 electrodes. Shad number 10. Non-ferrous-arc welding – 1/16-5/32 electrodes. Shade number 11. Gas shielded ferrous arc welding 1/16-5/32 electrodes. Shad number 12. Carbon car. Shade number 14. Oxyacetylene brazing. Shade number 3 or 4. Light cutting to 1 in. Shade number 3 or 4. Oxyacetylene welding up to 1/8 in. Shade number 4 or 5. Oxyacetylene welding up 1/8-1/2 in. Shade number 5 or 6.</p>					
<p>7. Adequate ventilation provided for the dissipation and delution of exhaust gases and welding fumes. 1910.252(f) 1910.93.</p>					
<p>8. Forge or furnace adequately vented. 1910.94.</p>					
<p>9. Oxyacetylene manifold welding systems installed according to the N.F.P.A. 1910.252(a) (2) (iv).</p>					
<p>10. Gages on O² marked "use no oil." 1910.252(vi) (c).</p>					
<p>11. Protective caps in place on all cylinders designed to accept a cap except when cylinders are connected for use. 1910.252(b) (iv) (4).</p>					
<p>12. Fuel gas cylinders and oxygen cylinders separated at least 20 ft. or a 5 ft. high wall of ½ hr. heat barrier. 1910.252(iv) ©.</p>					
<p>13. Compressed gas cylinders chained or secured in an upright position. 1910.252(2) (iii) (b).</p>					
<p>14. Portable gas welding equipment cylinder valves turned off when not in use. 1910.252(7).</p>					
<p>15. Backflow protection shall be provided by an approved device and manifold fluid level checked annually. 1910.252(3) (ii).</p>					
<p>16. Friction lighter available and used to light welding or cutting flame or pilot light.</p>					
VIII. Electrical					
<p>1. Electrical cabinets and power room accessible (and not blocked from use) only to authorized personnel. 1910.309 N.E.C.</p>					
<p>2. Electrical receptacles, junction boxes, and switch boxes properly covered. 1910.309 N.E.C. All receptacles are to be in good working order.</p>					
<p>3. Electrical outlets and fixtures properly grounded. 1910.309 N.E.C.</p>					
<p>4. Stationary power tools and equipment properly grounded. 1910.213(a) (11).</p>					
<p>5. Ground fault circuit interrupter (G.F.C.I.) available for outdoor use. Restroom facilities equipped with G.F.C.I. receptacles.</p>					
<p>6. Extension cords and portable power tools properly grounded or double insulated. Cords of 3 wire grounding type. 1910.213(a) (11).</p>					
<p>7. Electrical disconnects identified. (Circuit breakers, fuse boxes, etc.) 1910.213 N.E.C.</p>					
<p>8. Signal units for heating, ventilating, and air conditioning are operational. 1910.309 N.E.C.</p>					

AGRICULTURAL LABORATORY	MET	NOT MET	NEEDS IMPROVEMENT	N/A	COMMENTS:
9. Overcurrent devices on all electrical loads. 1910.309 N.E.C.					
10. All light switches are in good working order.					
11. Illumination is adequate in the power tool area. 1910.219 (50-75 ft. candles, 100 ft. candles over benches).					
12. A keyed master disconnect switch for all power tools.					
IX. Compressed Air Equipment					
1. Pressure gauge in airline. 1910.169(b) (3)					
2. Safety valve in air line in good working order and tested frequently. 1910.169(b) (3).					
3. Air used for cleaning regulated to not more than 30 psi and chip guarded. 1910.169.					
4. Air compressor drained frequently. 1910.169(b) (2).					
* National Fire Protection Association ** National Electrical Code					
AGRICULTURE CLASSROOM					
1. Classroom has adequate ventilation.					
2. Floors are kept clean, dry and clear. 1910.22.					
3. Exit doors are clearly marked and unobstructed. 1910.37.					
4. Illumination is safe, sufficient and well placed. 100-200 candle power-table height.					
5. Classroom has a temperature control.					
6. Classroom has an orderly general appearance.					
7. Furniture is in safe and dependable condition.					
8. There is an audible fire alarm in the classroom or in its vicinity. 1910.163.					
INSTRUCTOR'S OFFICE, CONFERENCE AND STORAGE ROOM					
1. General appearance is orderly. 1910.22.					
2. Illumination is safe and sufficient. 100-200 candle power at desk height.					
3. Ventilation is adequate.					
4. Floors are kept clean, dry and clear. 1910.22.					
5. The office has a temperature control.					
6. Adequate and proper storage space available for all teaching supplies. All materials are stored in a safe and orderly condition. 1910.176.					
7. Door is properly labeled (not an exit).					
8. Workbenches and tables are kept clean and orderly. 1910.22.					
9. Floor is kept clean and as dry as possible. 1910.37.					