CONFERRING in the new laboratory at Mesa are Dr. W. J. Pistor, left, head of the University’s Department of Animal Pathology, and at right, Dr. Rokey, head of the Mesa laboratory. Diagnostic work for the public, such as described in this article, is also done at Tucson, by the same department.

The laboratory is assigned a dual responsibility of research and diagnostic service. It is staffed by five full time employees who answer diagnostic requests and have research activities.

Acts as State Agency

Normally, diagnostic services to livestock industries are furnished by state departments of agriculture. Since Arizona has no such agency, The University of Arizona has made this service available. No charge is made for these services.

The largest number of Salmonella dublin isolations in the United States has been made at the Mesa laboratory, according to United States Public Health authorities. The disease has been diagnosed in cattle, horses, sheep, swine, rabbits, dogs, mice, and has also been isolated from raw milk. The diagnoses of Salmonella dublin in horses, sheep, swine, rabbits, and dogs at the Mesa laboratory are the first confirmed reports of the disease in these animals in the United States.

Salmonella dublin is a potentially dangerous disease for both man and animals. It is particularly destructive to calves. In humans, Salmonella dublin may cause a disease similar to typhoid fever. Initial surveys indicate that the infection may already be widespread in Arizona dairy cattle.

Identify Fowl Disease

Fowl spirochetosis has been known for many years in foreign countries. It was identified in Arizona at the Mesa laboratory in 1959. Previously, it had been reported only in turkeys in California. Since 1959, fowl spirochetosis has been diagnosed in several other Arizona poultry flocks. Fowl spirochetosis is capable of causing extremely heavy losses in poultry.

Canine piroplasmosis (tick fever of dogs) may be of particular interest to pet owners. Tick fever is an insidious disease in dogs and may be more widespread than is generally believed. It is believed to be carried by the common brown dog tick.

The laboratory provides services to all segments of the livestock and poultry industries. Each year, several hundred cases are processed at the laboratory. Since it began operation in July of 1957 some 37 per cent of all cases were cattle; 29 per cent poultry; 10 per cent horses; 4 per cent swine; 2 per cent sheep; and 18 per cent miscellaneous. Miscellaneous cases include feed, milk, wildlife, rabbits, pigeons, doves, etc.

Variance in Cases

A case may consist of one calf, 20 milk samples, or 10 chickens. Each case presented to the laboratory is assigned one accession number regardless of the number of animals or specimens involved. Many hundreds of laboratory tests may be necessary for an individual case. In 1960 a total of 11,717 separate laboratory tests were made. The tests included procedures of bacteriology, serology, necropsy, toxicology, parasitology, histology, pathology, and hematology. An additional 5,460 antibiotic drug sensitivity tests were made on bacteria isolated at the laboratory.

The number of accessions directly reflects the extent and prevalence of disease problems in livestock in the area serviced by the laboratory. During periods of low disease incidence, accessions may decrease while during the peak of disease epizootics, accessions may rapidly increase.

Also Do Research Work

In addition to diagnostic service work, the personnel are actively engaged in four research projects: "Salmonella dublin Infection in Animals"; "Etiology of Mortality of Baby Calves"; "Fowl Spirochetosis"; and "Canine Piroplasmosis."

Recommend 10 Practices

Cultural practices appear to offer the best protection. The following cultural practices have been effective in other midge-infested areas.

1. Control Johnson grass in or near sorghum fields. Johnson grass is not only a source of overwintering midges but also provides a reservoir of midges for late-planted sorghums.

2. Cultivate out or burn Johnson grass and other grain or forage sorghum refuse to destroy hibernating midges before they can emerge.

3. Plant sufficient seed to minimize tillering. Usually 6-8 lbs. of seed per acre on 32" to 40" rows is enough and will produce plants about 3" to 4" apart.

4. Plant as early as possible, April, May and June, especially with late-maturing varieties. This will reduce damage by the midges.

5. Use pure (certified) seed of a uniform blooming variety.

6. Pre-irrigate and prepare a good seedbed. Then cultivate the field to produce as uniform a crop as possible.

7. Plant upwind from any early-planted sorghum.

8. Plant in April, May or June when neighboring growers in the area are planting.

9. Avoid second growth in field; harvest grain as soon as mature.

10. Avoid cutting headed Johnson grass. Sudan grass or forage sorghums while grain sorghum is blooming because adult midges will emerge from cut plants and lay eggs in the grain sorghum.

Bedeed practices will reduce losses caused by midges while they are in the larval stage.