Semen evaluation (practical)

1- Individual motility: used solution for dilution consist from :

Normal saline (0.9 NaCl gram/100ml double distal water) or 2.9 gram sodium citrate/100ml double distal water.

2-Dead &Live : Stain used consist from :

Eosin : 1gram +2.9 gram sodium citrate/100ml double distal water.

Nigrosin : 5 gram +2.9 gram sodium citrate/100ml double distal water or (1gram Eosin +5gram Nigrosin +2.9 gram sodium citrate/100ml double distal water.)

3-Concentration of sperms: solution used consist from :

0.9 gram NaCl (used for dilution sperm in order to counting)+ 5-6 drops of Eosin(help to seen sperms) + 0.01 gram $HgCl_2$ (help to stopping movement of sperms in order to counting)

Macroscopical examination

- **1- Color:-**
- In animals the normal colour is:
- a. **Bull**: creamy white(may be light yellow due to riboflavin secreted from seminal vesicles).
  b. **Ram and buck**: creamy white and thick
  c. **Boar**: milky
  d. **Stallion**: grayish white and thin

- **Abnormal colors:**
- - **Yellow**: release from presence pus or urine in semen
- - **Red**: release from new injury or bleeding in reproductive system .
- - **Deep brown**: release from old bleeding or hemolysis in RBC
- - **Green**: contamination the seminal fluid by feces
- - **Watery color**: there are no sperms only plasma, this case called **azospermia** .

- **2- PH:-**
- Normal reaction of semen is alkaline 7.4 at the time of ejaculation.
- **3- Viscosity:-**
- **4- volume:-**

Animal species	Ram	Bull	Stallion	Boar
Vol./ml	0.5 – 2	5 - 15	40 - 200	250 - 400

- The normal volume in human 2-6 ml.

Microscopical examination

- **1-Motility**

A-Gross or mass motility is examined first.

- Mix the semen sample with a wooden stick, as motile sperm cells will try to swim upward and dead cells will settle to the bottom.
- For gross motility use 2 wooden sticks to place a drop of semen on a warm slide.
- Do not use a cover slip and examine the cells under a 10X objective.

B-Individual motility is examined next

- Individual motility checks for the forward progressive movement of the sperm cells.
- Make the sample by placing a drop of diluent (saline or Na citrate) on a warm slide.
- Place a small amount of semen into the saline.
- Then place a warm cover slip on the drop.
- Examine the sample under high dry (40X) power.
- You must examine the sample quickly as the motility changes very rapidly with heat, light, and cold.

- Individual motility
- A-Normal: progressive forward motility
- B- Abnormal: defects in tail or head of sperm

1- Progressively backward motility - defect in tail.

2- Circular motility –defect in tail.

3- Oscillatory motility – defect in head.