

Look around you...

Is there purple discoloration on the edges of plants?



IN-TON-200700001

**It's Phosphorus deficiency in plants and soil,
resulting into Phosphorus deficient feed and fodder for animals.**

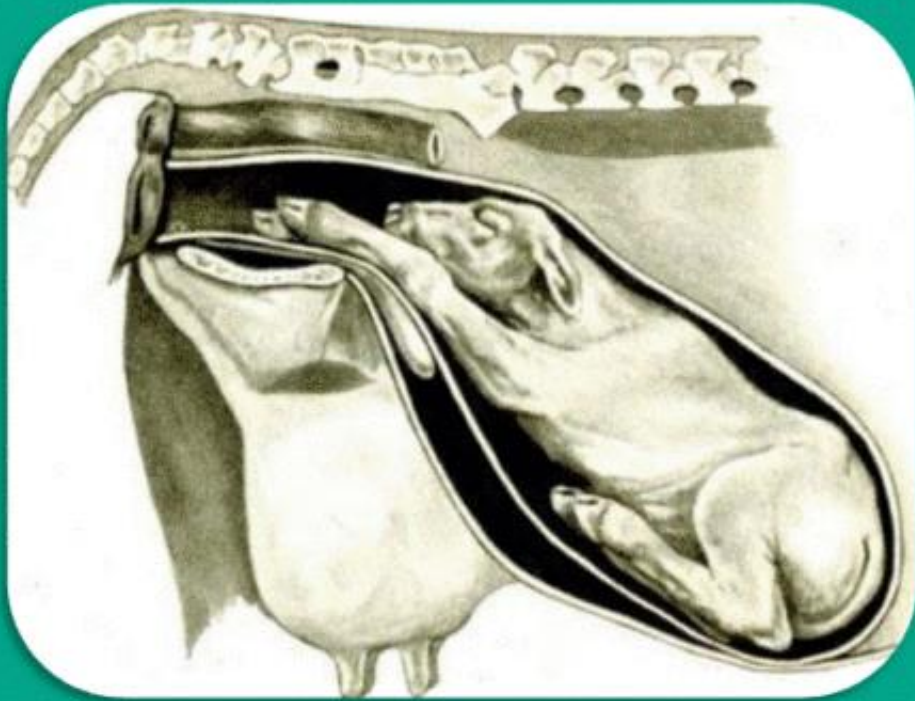
Few Facts about Phosphorus in Ruminants

- ▶ Whole blood contains 350-450 mg/L phosphorus and more than 95% is of organic form.
- ▶ The average milk phosphorus concentration is 0.9 g /kg of milk for lactating dairy cow.
- ▶ Phosphorus concentration is 370-720 mg/L of saliva in adult cattle .

-NRC 2001



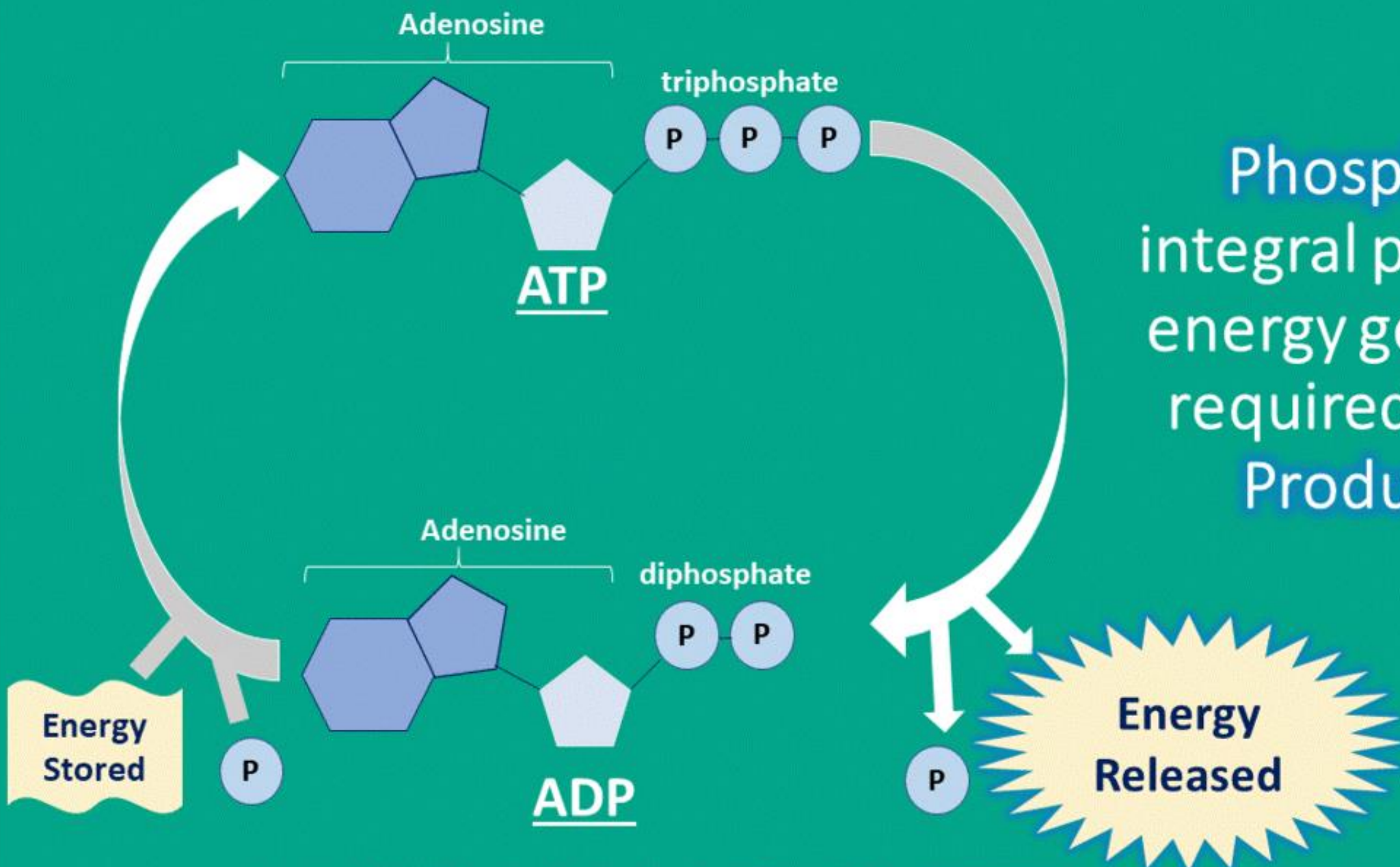
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Phosphorus Requirement Increases in Third Trimester of Pregnancy

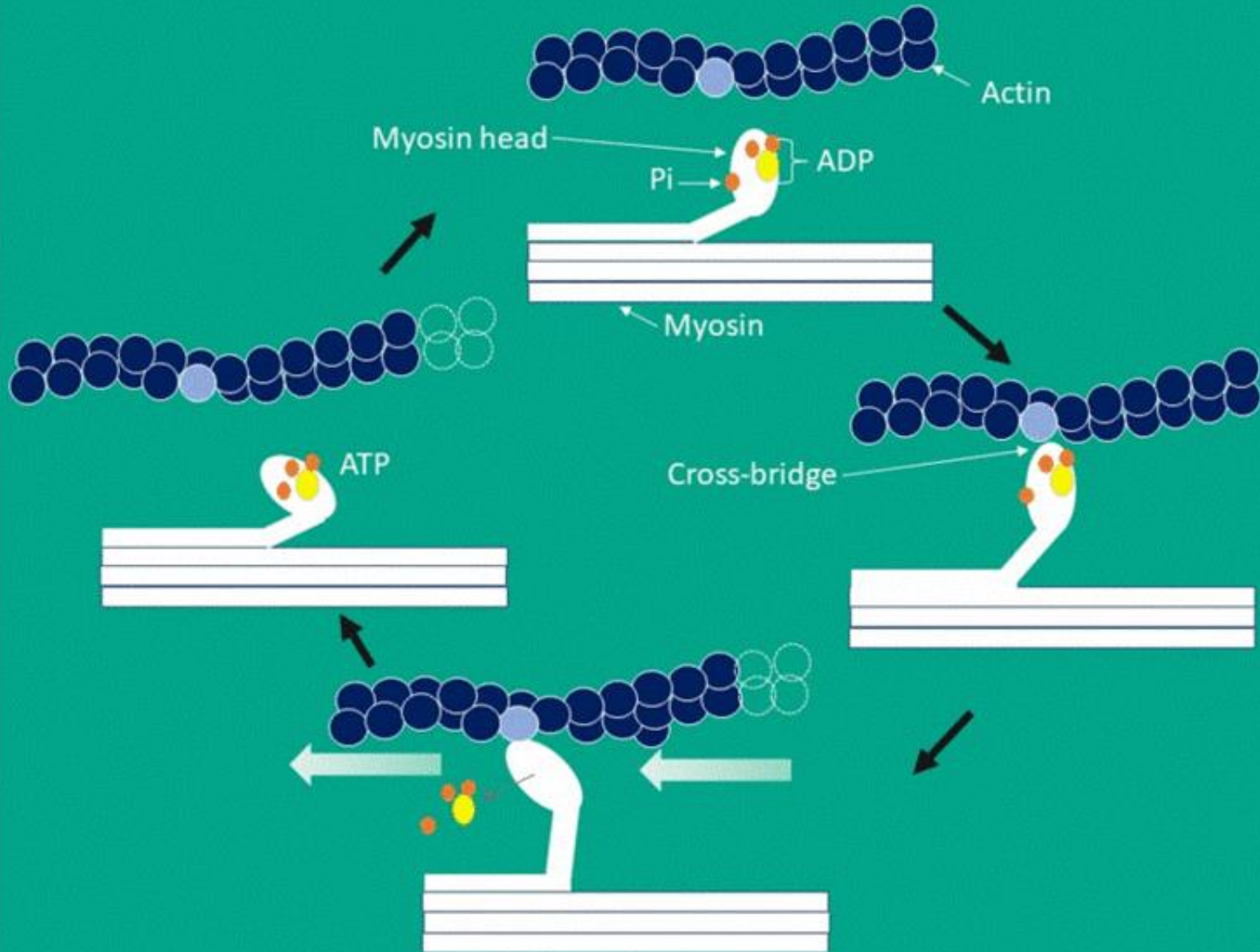
Rate of phosphorus accumulation in fetus and fetal membranes of Holstein cow is 1.9 g/d at 6th month and increases to 5.4 g/d at 9th month of gestation.

-NRC 2001



Phosphorus is integral part of the energy generation required for Milk Production.

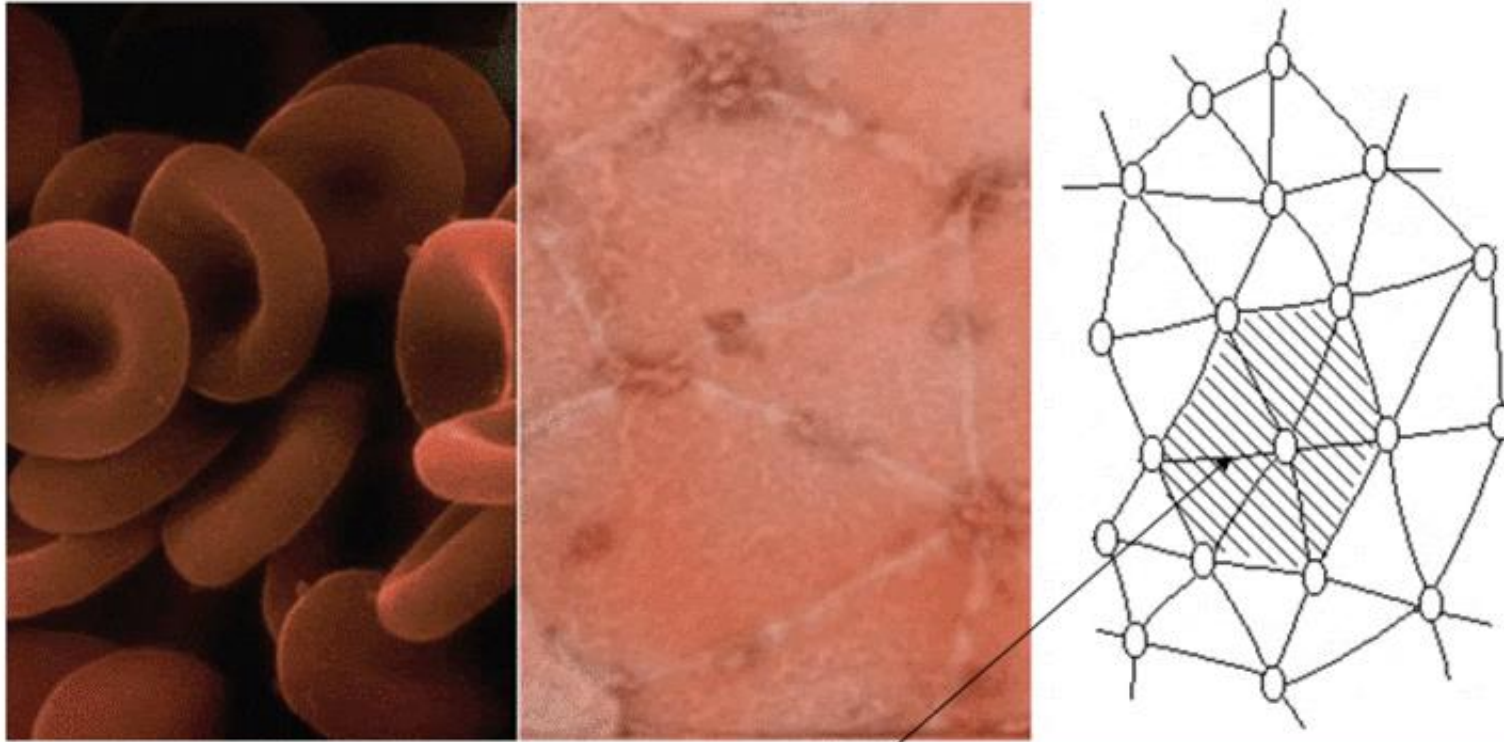
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Muscle tonicity requires **Phosphorus (ATP)** and deficiency can lead to:

- ▶ **Muscular Weakness**
- ▶ **Debility**
- ▶ **Lameness**
- ▶ **Joint Stiffness**

Flexibility to RBC is due to phosphorylated sponge like protein i.e. Spectrin.

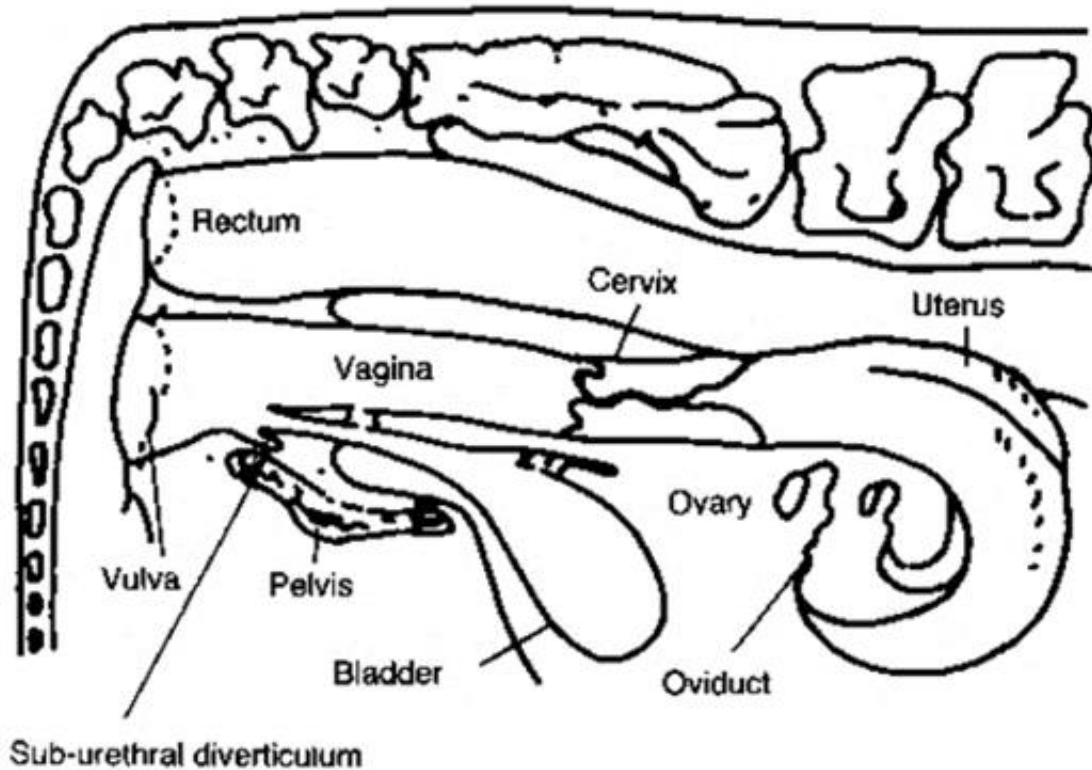


Sponge/ mesh like phosphorylated protein (Spectrin) skeleton

Post-parturient Hemoglobinuria (PPH) is a result of less Phosphorus and ultimately rupture of RBCs.

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Phosphorus is required for reproductive organ and follicle development.



Phosphorus deficiency can lead to Anestrus.

Severe deficiency of phosphorus caused infertility or reduced reproductive performance of cattle (Alderman, 1963; Morrow, 1969; McClure, 1994).

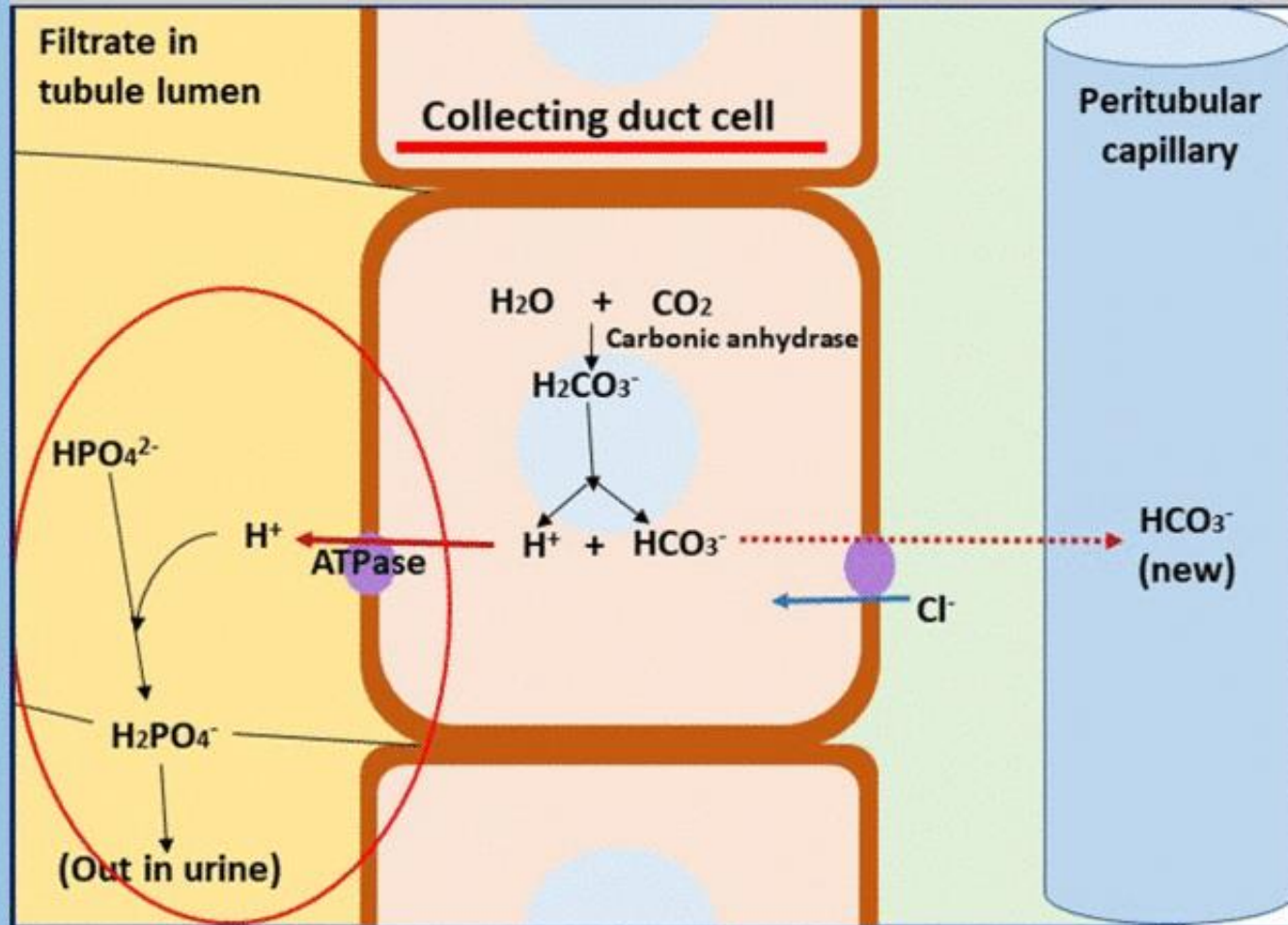
- NRC 2001

Phosphorus deficient animal shows abnormal feeding behavior in which it starts eating inedible items like walls, woods, papers etc.



Pica is observed in Phosphorus deficiency.

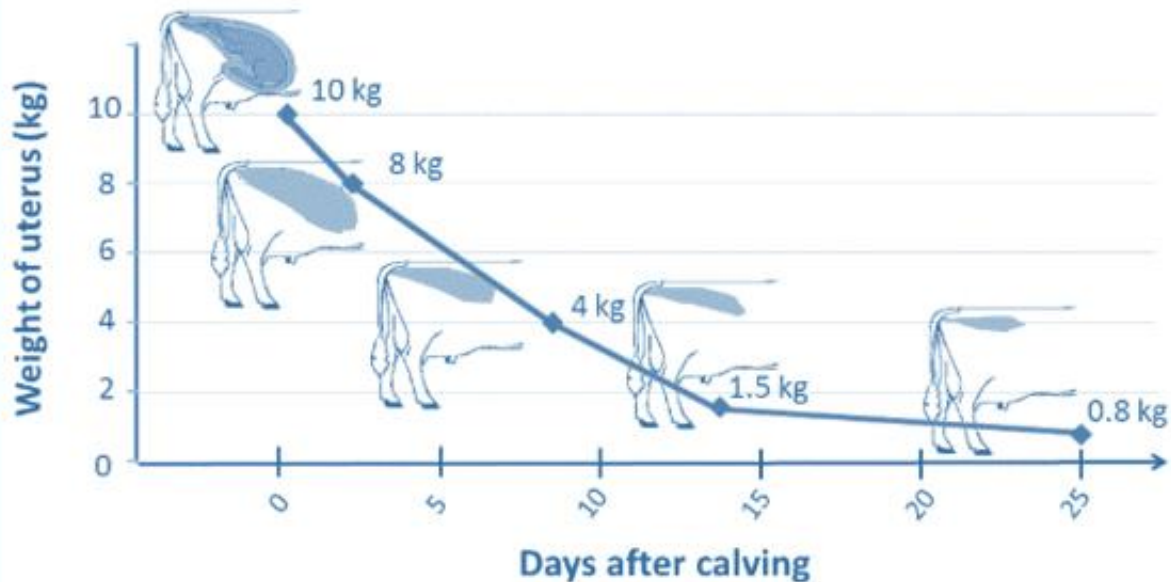
Phosphate Buffer System



Phosphorus is very important for Blood acid-base balance.

Cows with normal parturition complete uterine involution in 38 – 45 days postpartum.

-By Benjamin Cengic, N. Varatanovic, T. Mutevelic, Amela Katica, 2012

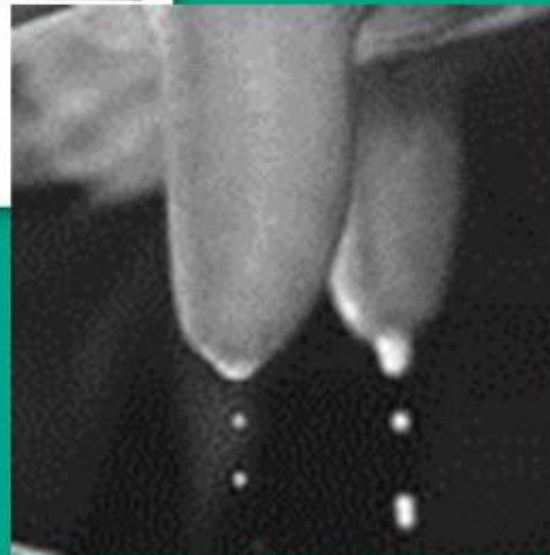
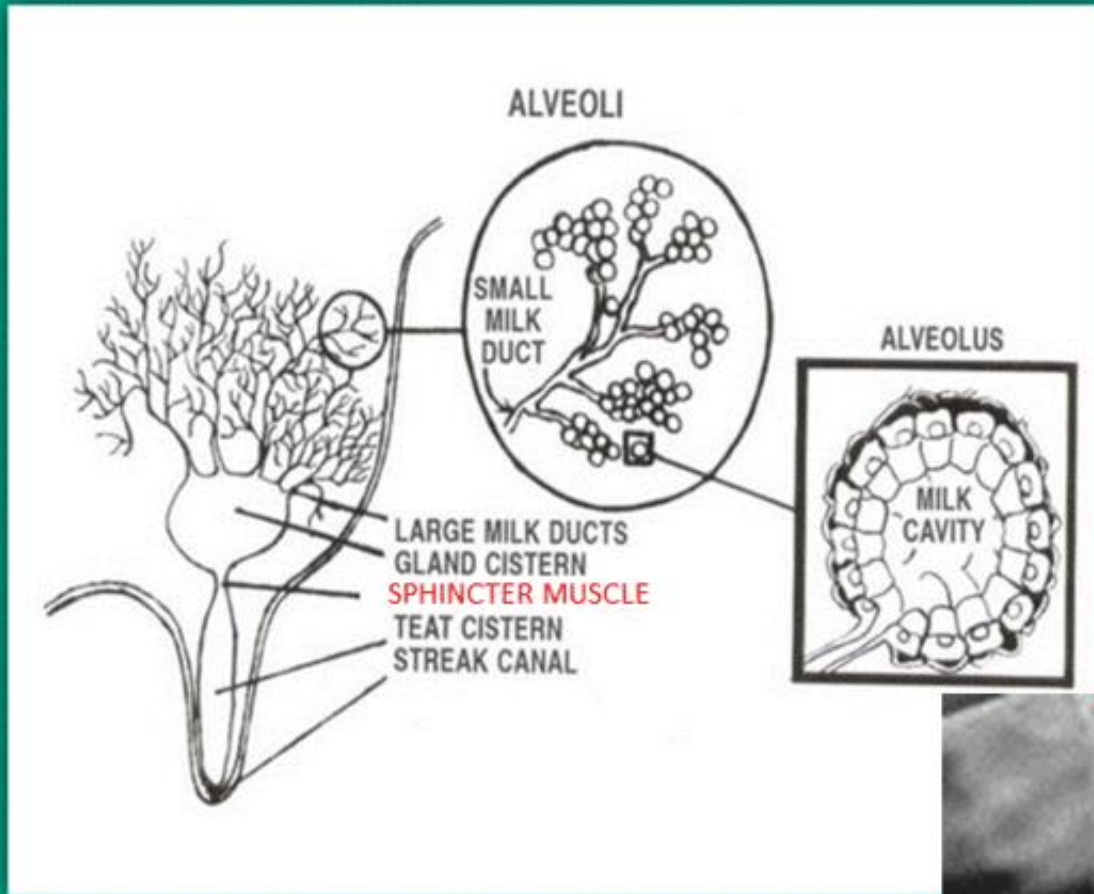


Phosphorus deficiency may lead to Delayed Uterine Involution.

- Elevated plasma estrogen concentrations during late pregnancy predispose cattle to cervico-vaginal prolapse.
- Contributing factors are pluriparity, obesity, large calves, and occasionally hilly terrain.



Phosphorus is helpful in preventing cervicovaginal prolapse as it plays important role in muscle tonicity.



Phosphorus is helpful in preventing Leaky teats as it plays important role in muscle tonicity.