ADEK POWDER

(Vitamin A, Vitamin D-3, Vitamin E, Vitamin K-3)

SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE VETERINARY MEDICINAL PRODUCT

ADEK POWDER

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each Kg Contains:
Vitamin A …… 20 M.I.U
Vitamin D-3 …….. 2 M.I.U
Vitamin E …….. 6000mg
Vitamin K-3 …….. 5000mg

3. PHARMACEUTICAL FORM

Oral powder

4. CLINICAL INFORMATION

4.1. Target species

Cows, Buffaloes, Goats and Sheep, Poultry

4.2. Indications for use specifying the target species

Deficiency of vitamin A, D3, E and K to improve reproductive performance to increase fertility and conception rate to increase milk and meat production to control hemorrhage

4.3. Contraindications

Not known.

4.4. Special warnings for each target species

Not known.

4.5. Special precautions for use

Once opened the pack should be used quickly. Store in a cool and dry place, away from light.

Special precautions for safe use in the target species:

Not Reported.

Special precautions to be taken by the person administering the product to animals:

People with known hypersensitivity to the active substances should avoid contact with the veterinary medicinal product.

Avoid contact with eyes, skin, and mucous membranes.
Wash hands thoroughly after handling the product.
Keep out of reach of children.
In case of accidental self-injection, seek medical advice immediately and show the package leaflet or the label.

4.6. Adverse reactions (frequency and seriousness)

Not known.

4.7. Use during pregnancy and lactation or lay

Not Reported.

4.8. Interaction with other veterinary medicinal products and other forms of interaction

None known.

4.9. Dosage and administration route

Cows and Buffaloes: Daily 100 g for 15 days
Goats and Sheep: Daily 25g for 15 days
Or as per direction of registered veterinarian/consultant.
Poultry: Mix 160 g/400–600 L of drinking water**,** Administer continuously for 5–7 days

4.10. Overdose (symptoms, emergency procedures, antidotes), if necessary

Not Reported.

4.11. Withdrawal period:

Meat & Milk: 0 Days

5. PHARMACOLOGICAL PROPERTIES

ATCvet code: **QA11BA**

5.1. Pharmacodynamics properties

Vitamin A is necessary for at least five different physiological processes:

- normal vision
- maintenance of epithelial integrity
- normal reproductive function and embryonic development
- bone development
- immunity

Vitamin D is mainly involved in the regulation of parathyroid hormone secretion and the regulation of calcium and phosphorus metabolism, necessary for normal intestinal absorption, renal excretion and bone mineralization of these elements. The main signs of vitamin D deficiencies are associated with skeletal abnormalities, associated with rickets.
Vitamin E is mainly effective for its antioxidant properties, which are necessary for the proper functioning of a number of physiological structures and processes, including membrane structures (stability and integrity), prostaglandin biosynthesis, blood coagulation, reproductive function and immunity.

Vitamin K, a fat-soluble vitamin, plays a crucial role in blood clotting.
It functions as a cofactor for an enzyme complex that carboxylates specific glutamate residues within precursor proteins of coagulation factors II (prothrombin), VII, IX, and X. This carboxylation step is essential for activating these factors, which subsequently participate in the blood clotting cascade, culminating in the formation of a stable blood clot. Consequently, vitamin K deficiency can lead to impaired blood clotting. Oral administration of vitamin K can effectively correct this deficiency by restoring normal blood clotting function. Furthermore, regular vitamin K supplementation can prevent deficiencies, particularly in animals with limited access to vitamin K-rich foods or those receiving medications that interfere with vitamin K metabolism. Vitamin K absorption is facilitated by bile acids in the gastrointestinal tract, while its metabolism primarily occurs in the liver.
Excretion of vitamin K occurs predominantly through bile and urine

5.2 Pharmacokinetic information

Vitamin A is absorbed from the intestine after hydrolysis by retinyl ester hydrolase, secreted by the pancreas. Fatty micelles present in the intestine facilitate the uptake of retinol by enterocytes. Retinol is then esterified, mainly with palmitate and taken up by chylomicrons, to be transported via the lymphatic system to the liver. The liver contains about 90% of the total vitamin A content in the body.
Vitamin A is excreted mainly through urine and feces.
Vitamin D is absorbed together with existing fats and is consequently stimulated by bile and pancreatic secretions. Absorbed vitamin D is taken up by chylomicrons together with other fats for transport via the lymphatic system to the bloodstream. Vitamin D3 (cholecalciferol) is converted to 25 hydroxycholecalciferol (calcifediol) in the liver and subsequently to the active metabolite 1, 25-dihydroxycholecalciferol (calcitriol) in the kidneys. Excretion of absorbed vitamin D and its metabolites occurs mainly via the feces with the help of bile salts. Only very little vitamin D appears in the urine.
The absorption of **vitamin E** is dependent on fat digestion and is therefore also facilitated by bile and pancreatic secretions. Vitamin E esters, present in the diet, are hydrolyzed in the intestinal mucosa. Most vitamin E is therefore absorbed as the free alcohol to be transported via the lymph and further via the bloodstream. Vitamin E is stored in all tissues,but mainly in the liver. Vitamin E is metabolized in the liver and excreted mainly via the bile (70-80%) and urine.
Vitamin K, a fat-soluble vitamin, is absorbed from the gastrointestinal tract with the aid of bile acids and dietary fats. Once absorbed, it binds to carrier proteins and is primarily distributed to the liver for metabolism and storage. In the liver, vitamin K is metabolized into active forms like menaquinone-4 and menaquinone-7. Excretion primarily occurs through bile and urine. Factors influencing pharmacokinetics include dietary fat intake,bile acid secretion, antibiotic use, and interactions with other medications. The appropriate-ate dosage and monitoring of blood coagulation parameters are essential for effective vitamin K therapy in veterinary medicine

6. PHARMACEUTICAL INFORMATION

6.1 Incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

6.2. Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years.

6.2. Special precautions for storage

Store below 25°C.
Protect from light and moisture.
Keep out of the reach of children.
To be used as directed by the registered veterinary practitioner only.

6.3. Nature and composition of primary conditioning

Metalized Aluminum Foil pouch for 250 gm, 1kg, 2.5 Kg & 3kg

SPECIAL PRECAUTIONS FOR THE DISPOSAL OF WASTE MATERIALS
UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS

Waste materials derived from the use of such products. Medicinal products should not be disposed of via wastewater or household waste. Use return systems for unused veterinary medicinal products or waste materials derived from such products, in accordance with local requirements and national collection systems applicable to the veterinary medicinal product concerned.
Treated animals should be kept in shelters throughout the treatment period and their droppings should be collected and NOT used for soil fertilization.

7. MARKETING AUTHORISATION HOLDER

Nawan Laboratories (Pvt.) Ltd.
Plots No. 136-138, Sector-15,
Korangi Industrial Area, Karachi-74900, Pakistan.

8. MARKETING AUTHORISATION NUMBER

Reg. No.: 012993

9. DATE OF FIRST AUTHORISATION

Date of Reg.: 08-12-1991

10. DATE OF REVISION OF THE TEXT

17-02-2025

MANUFACTURED BY:

NAWAN LABORATORIES (PVT) LTD.
136, Sector 15, Korangi Industrial Area, Karachi-74900, Pakistan.