

THE ONLY EROSION CONTROL MATTING WHICH CONTRIBUTES SIGNIFICANT PKN DURING BIO- DEGRADATION TO THE SOIL ON THE MARKET TODAY

Greenfix “PKN” Series Blankets

This new developed erosion control matting was designed to minimize erosion in the non-vegetated state but also enriches the soil with a unique bio-degradable material that produces PKN (potassium, nitrogen and phosphate) for the soil and the newly developed vegetation. This will reduce or eliminate the required fertilization on any project, which is import during initial vegetation establishment. The “PKN” Series blankets are **Greenfix Engineered** to ensure that the product meets the objective of an erosion control mat with the additional value to assist in establishing vegetation that no other product provides today.

Applications not limited to:

- Slope Protection
- Bio-Nutrient Soil Amendment
- Bio-Engineering

Major Advantages over so called similar products or performance similarities:

- Only Product to have the capabilities of significantly adding PKN to the soil during bio-degradation of the temporary blanket.
- Helps strength the newly germinated seed and vegetation until the bio-degradation blanket is degraded.
- Reduces or eliminates your potential fertilization application during seeding and future fertilization applications.
- No USDA fumigation required. Straw fiber used for the PKN series blankets are not from cereal grain crops. The crops are primarily cultivated for animal feed forage and are planted with USDA registered seed for export purity (Certified Weed Free).

General Performance Parameters and Manufacture Index Parameters:

Traditionally, wheat straw has been used as the foundation for erosion control blankets. Wheat straws tend to be very high in fiber and low in nitrogen. The reason for this is that much of the essential nutrients that were present in the plant's stems and leaves were assimilated into the grain during seed filling. The plant transports much of the available nutrients into the grain as the field ripens. Approximately, one- half of the nutrients in the leaves and stems are lost as the seeds are filled and matured. When the process is complete the seeds are harvested. The remaining vegetation is low in protein and other essential nutrients. This makes the straw more resistant to decomposition by organisms in the soil. That is, the wheat straws are less biodegradable than other straws in the soil.

A common fertility problem is caused in fields that follow grain crops that leave wheat straw. The straw is so devoid of nutrients, it "ties up" the available nutrients present in the soil during decomposition. Generally, fertilizers such as nitrogen are applied to the soil to avoid a fertility "depression" during straw breakdown. Normally, 20 lbs of nitrogen are applied per acre for each ton of straw to counteract the immobilization of the nitrogen. Other alternative strategies include removal of the straw by baling or burning.

Conversely, hays such as Sudan grass are harvested prior to seed formation. They retain many of the essential nutrients that would have been removed during the seed forming process. Sudan grass, contains the highest proportion of nitrogen (N), phosphorus (P) and potassium (K) compared to other grass hays (oats, rye grass and wheat). Sudan grass contains more than twice the fertilizer value by comparison to wheat straw (see below).

Composition of Organic Materials

Straw Materials	Moisture %	Approximate Lbs Per Ton of Dry Material		
		N	P	K
Barley	10	12	5	32
Rye	7	11	4	22
Oat	10	13	5	33
Sudan	11	28	12	31
Wheat	8	12	3	19

Adopted from Knotts Handbook for Vegetable Growers, third edition, Willey-Interscience Publication, New York, NY (1988).

These nutrients are essential to crop growth, especially during the establishment phase. The use of wheat straw based blankets will tend to reduce the available nitrogen in the soil during revegetation and decomposition. This will occur as the straw begins to biodegrade. Conversely, the use of Sudan grass based blankets may compliment the fertility program. Sudan grass will not reduce the nutrient pool like a wheat straw based product will.

Nitrogen Content & Leachability Comparison By Fiber Material

Materials	%Nitrogen	Leachability Mg/L (Short Term Release)
Sudan	1.86	8.19
Rice Straw	0.78	4.34
Coconut Fiber (Coir)	0.41	<.5
Jute Netting	0.21	<.5
Wheat Straw	<0.50	n/a

References:

Greenfix America

1. PKN Development & Manufacturing
2. Erosion Control Testing

Stanworth Crop Consultants

1. Analytical Data Review
2. Germination Testing

Midwest Laboratories Inc.

1. Leachability Tests
2. Mineral Analysis Tests