

Wheat Karnal Bunt

Tilletia indica Karnal Bunt



Two ears of smutted wheat. Photo by Ruben Durán, Washington State University, Bugwood.org



Wheat kernels infected with Karnal bunt. Photo by CIMMYT (CC BY-NC-SA)

Prevention	Monitoring	Direct Control	Direct Control	Restrictions	
<ul style="list-style-type: none"> • Use resistant varieties such as 09, Chont or Koshan • Crop rotate to leguminous crops like beans or peas instead of wheat for 2-3 years • Change sowing time to prevent too much humidity in the field. Start sowing and growing 15-20 days before the usual dates of sowing • Check the soil and if it is too humid, do not irrigate • Do not sow more than 28 kg per Jrib. Too many seeds increase the humidity of the soil • Collect plant residues between seasons to make sure the disease does not overwinter in the field • Only use clean seed. Put them in water. The diseased one will float to the top • Avoid transportation of infected seed to diseased free areas • Ploughing and flooding in winter 	<ul style="list-style-type: none"> • Monitor the field twice during the season: once during the spiking stage, and once when the crop is nearing maturity • At the harvesting stage, observation should be done more frequently • A disease grain will be brown to black • Only a few spikes/ ears may show symptoms and the grains are only partially diseased so need careful observation • Infected plants/ ears may also be shorter than healthy ones. 	<ul style="list-style-type: none"> • Collect infected spikes very carefully, as the disease can spread very easily if you shake the crop a lot. Put a plastic or paper bag on top of the wheat spike when you remove the spike • Diseased ears need to be destroyed after removal outside of the field 	<ul style="list-style-type: none"> • When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval • During the use of pesticides, prevent children and animals from entering the field and do not eat drink or smoke whilst using chemicals of any kind • Change your clothes and wash your body and face after using chemicals • Keep pesticides out of reach of children 	<ul style="list-style-type: none"> • Seed treatment with Thiram @ 2g per kg of seed • Carboxin seed dressing @ 2g per kg of seed is also effective 	<ul style="list-style-type: none"> • Who class II; classified as moderately hazardous; dusts of more than 15% a.i thiram should not be used • Carboxin has Class III: Slightly hazardous. In humid bags, place mixture and seeds, and shake to mix properly. This should be done one week before the sowing



Afghanistan

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