

# Yellow rust resistance in IWWIP germplasm in Uzbekistan in 2016

Nursery name	Number of entry	Yellow rust score (% severity)	
		0, R	5-10 MR
19IWWYT-IR	40	8 (3 sel)	5 (3 sel)
18IWWYT-SA	35	14 (4 sel)	3 (0 sel)
23FAWWON-IRR	160	30 (11 sel)	27 10 sel)
23FAWWON-SA	100	24 (6 sel)	12 (5 sel)

**Total (0 – 10 MR) = 123/335 = 37%**  
**Total selected = 42/335 = 13%**  
**Selected/Total R = 42/123 = 34%**

**Conclusion: Agronomically superior, yellow rust resistant germplasm continuously increasing in IWWIP nurseries**



**Number of lines selected and advanced in different epidemic years**

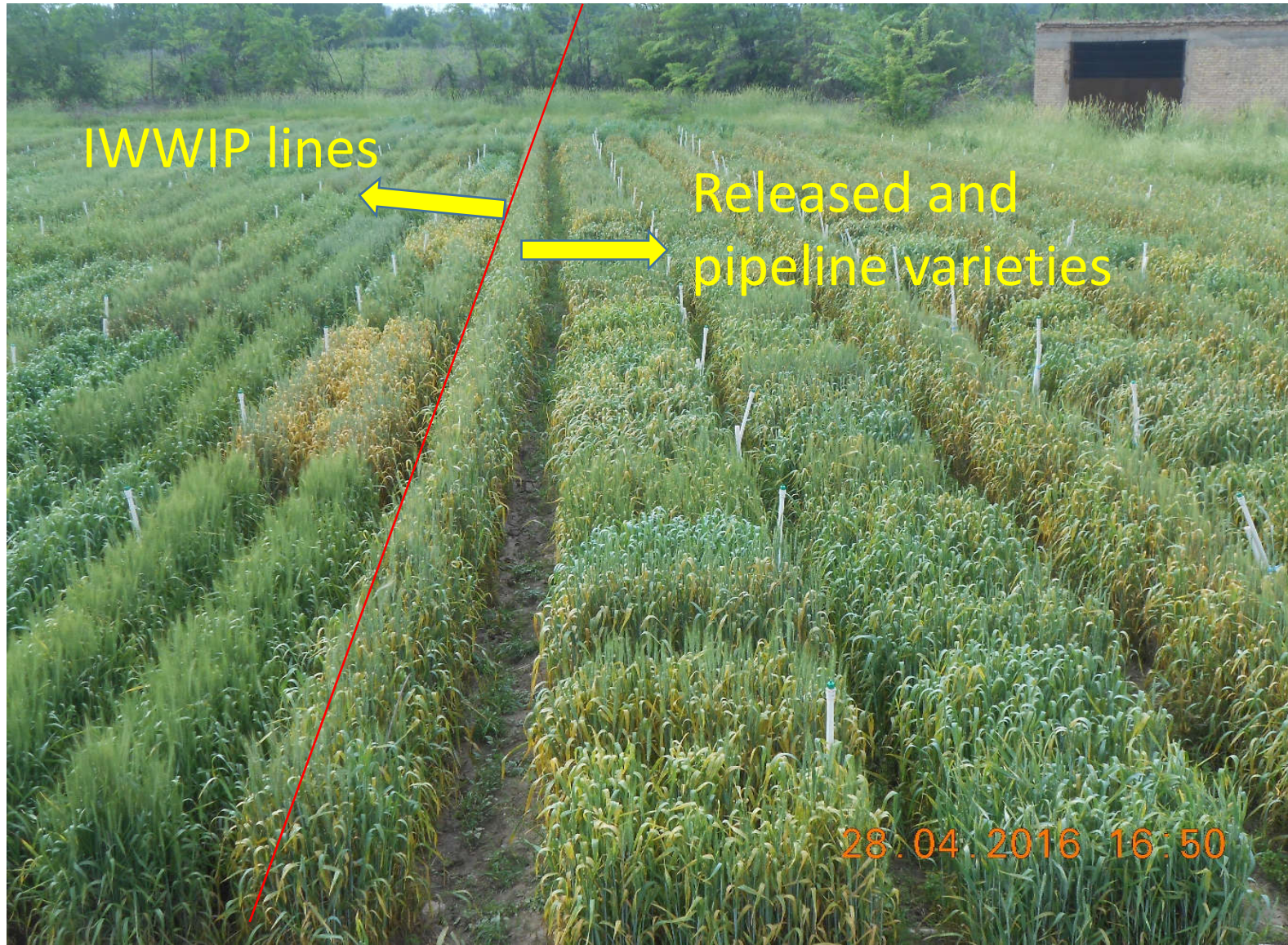
**2009 YR epidemics – 17 lines**

**2013 YR epidemics – 10 lines**

**2016 YR epidemics – 42 lines**

# Yellow rust epidemics in Uzbekistan – 2016

## Released and pipeline varieties vs. IWWIP lines



### Result:

- IWWIP lines represent much lesser severity than released and pipeline varieties
- All released varieties from sources other than IWWIP germplasm were highly susceptible

## Area planted with yellow rust resistant winter wheat varieties developed through international collaboration, 2016

Variety names	Area planted (x1000 ha)	% of cultivated area
Yaksart (Winter)	240	21.2
Gozgon (Winter)	78	6.9
Jaykhun (Facultative)	35	3.1
Turkiston (Winter)	31	2.7
Hazrati Bashir (Facultative)	14.5	1.3
<b>Total:</b>	<b>409</b>	<b>35.2%</b>

### **Conclusion:**

**Continuous increase in cultivation of yellow rust resistant varieties since 2012 (5%), 2013 (10%), 2014 (20%), 2015 (25%) and 2016 (35%)**

# Analysis of fungicide cost in 2016 and potential savings to farmers from growing just one variety in 2017

## **Cost of fungicide spray (2016):**

**1-3 sprays ( 70 to 210 USD/ha)**

**Fungicide cost on spraying 200,000 ha  
(minimum estimate)**

**200,000 ha = USD 14 – 42 million spent on  
fungicide spray**

**2016 case: epidemic lasted for 4 months, so  
1 to 3 fungicide sprays**

**In 2016: Gozgon was planted on 8000 ha  
No fungicide sprayed was sprayed on Gozgon  
Potential saving: 1.7 million USD (compared to  
susceptible cultivar)**

## **2017 Scenario**

Gozgon wheat variety showed 5MR score in 2016 and was not sprayed at all

2017: Gozgon planted on 78000 ha

## **Potential saving from planting Gozgon**

**1 spray:  $78000 * 70 \text{ USD} = 5.5 \text{ million USD}$**

**2 sprays: 11 million USD**

**Note: Fungicide spray on susceptible varieties  
already started in January, 2017 due to early  
infection**