

Research Article

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Abstract

Virulence surveys of Puccinia hordei of barley were conducted in the main and off crop seasons of 2010/11 and 2011/12 in West Shewa, Wellega (western part of the country) and Arsi (central part of the country) zones of Oromiya region, Ethiopia to determine the virulence spectrum of the pathogen, and identify the effective resistance

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Ce ea , d_{χ} c, /a , d_{χ} c, acce., be a., $\underline{\emptyset}$ ed b. U , ed Saac De a , e , $f A \underline{\emptyset}_{\chi}$ c, χ e (USDA).

U ed , e. feac , a e / e e , e ded , d., ed / a e / d , f / ee 20 a , ead a a d ad e , a a a e , e , e , / a , a ed , eed a f , e d e e , a , aa , e. A e , a , e , a , / e , . e ed / , d., ed / a e a d aced , a , c ba, c a be f 16-20 da e , d a 20 C. e. eed a / e e , e a e , e a / e e , e ce , a , a , ded f 16 , a 20 C a d RH f 60 -70% W , 7 10 da a e , c a , da a e , fec. e e / e e c ded.

e, fec. e fba e eaf ... e e eadf eac d e e a ... Le, ea dC e e c [17], 0-4. c \blacksquare cae. e, fec. e 0, 0; 1 a d 2⁺ / e e a e a c a, b e / e ... a ce (/) a d 3 a d 4⁺⁺ / e e a e a c a, b e / a, ce, b e (\blacksquare) eac. .. Oc. a ce de \blacksquare a, ... e / a , ed. a e e ... I e , ... a e de e , edb. add \blacksquare a, e . a c e d. eac d e e , a . / c . e. a e / a , e . [18].

Differential hosts	CI/PI number	Resistance gene	Octal value
Sudan	CI6489*	Rph1	1
Peruvian	CI935	Rph2	2
Estate	CI34102	Rph3	4
Gold	CI1145	Rph4	10
Magnif	CI13806	Rph5	20
Bolivia	CI1257	Rph6 +Rph2	40
Cebada Capa	CI6193	Rph7	100
Egypt 4	CI6481	Rph8	200
Hor 2596	CI1243	Rph9	400
Clipper BC8	-	Rph10	1000
Clipper BC67	-	Rph11	2000
Triumph	PI2668 180	Rph12	4000

 Table 1: Puccinia hordei differential hosts with CI/PI number, resistance genes and octal values.

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Year	Season	Zone	No. of isolates tested	No. of pathotypes	Pathotypes
2010/11	1*	West Shewa	13	3	ETPh6631, ETPh7631, ETPh6671
	1	Arsi	21	6	ETPh6611, ETPh6631, ETPh6671 ETPh7611, ETPh7631, ETPh7671
	1	Wellega	6	3	ETPh6611, ETPh6631, ETPh7671
Sub		40	6		
2011/12	1	West Shewa	3	2	ETPh7611, ETPh7651
	1	Arsi	8	4	ETPh6611, ETPh6631, ETPh6671, ETPh7671
	1	Wellega	5	2	ETPh6611, ETPh7611
Sub		16	6		
Total		56	7		
2010/11	2	Wellega	26	3	ETPh6631, ETPh6671, ETPh7671
2011/12	2	Wellega	6	1	ETPh6611
Sub total		32	4		
Grand total (1+2)		88	7	ETPh6611, ETPh6631, ETPh6671, ETPh7611, ETPh7631, ETPh7651, ETPh7671	

*1 is main season, 2 off season

Table 2: Puccinia hordei pathotypes identifed from barley growing areas of West Shewa, Wellega and Arsi zones, 2010/11-2011/12 seasons.

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e f e e e e e e e be f a e A, e a g e a e ace, We S e a a d We e a , c, d bab. be beca, e, A, e e e d e, f ca a d, ed ba e a e e g / . g M e e, e a e d e e ed, e / d e e e e a / e e, a d ca g a ca e f e a g e f e e e e e e ca cc, e e a e a be de, a f e a e e f, dd, g . . . d / e e, a / . . e de e e d f Bae, a d e e S e a e f O a e g a / e a f G a a d e e S e a e f A a a e g 2003 a d 2004 [16]. , e a e a d . . . d e de . . a e e e g e e f e e a . . . e g E a.

V, e ce. ec., a dfe, e c. f, ..., a. ..., e. . e. ee e a d, e a a d - ea f 2010/11 2011/12 a e. / Tabe 3. ... - eM (43.2%) f e 88. a e / e e a. ... e ETP 6631. I. / a d. ... b, ed. a · ee e ... b. .ea ... a d. ea. I · e ... a · ea , a · e ETP 6631 / a ... a ed f a · ee e ... a · ea , a · e ETP 6631 / a ... a ed f a · ee e ... a · ea , a · e ETP 6631 / a e ded, b, · · · e ec d ea ... a · e / a · ... a ed ... e I · e · ea f 2010/2011 a · e ETP 6631 / a e ded, b, · · · e ec d ea ... a · e / a · ... a ed ... e · e ce., d f ... 2003 a d 2004. ... a · ... e / a de · e ef · e · ... d . ETP 6611 / a · e · ... d f e e · a ed a · e · e e ... d . ETP 6611 / a · e · ... d f e e · a ed a · e · ... e ETP 6631 a d ETP 6671 / a · ... f, d a · e / e e. a ed ETP 6611 / ... a e (19.3%), f / edb. a · e ETP 6611 / ... e ETP 6671 / a f · / e. S e / a dA... e. e e f. e a · e e add. b, be / 10%, / ... a · ... f e e c f 2.3% f a · ... e ETP 7651. Citation: Woldeab G, Hailu E, Ababa T, Negash T (2015) Virulence Spectrum of *Puccinia hordei* of Barley in Western and Central Highlands of Ethiopia. Adv Crop Sci Tech 3: 164. doi:10.4172/2329-8863.1000164

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