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# CHIMALI 2023

MARSALA



## XIII CONGRESSO NAZIONALE DI CHIMICA DEGLI ALIMENTI

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29 – 31 maggio 2023

Hotel Resort Villa Favorita,  
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# **XIII CONGRESSO NAZIONALE DI CHIMICA DEGLI ALIMENTI**

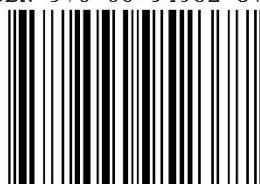
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## Characterization of different cultivar of *Fagopyrum esculentum*: a high value nutritional source

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The common buckwheat (*Fagopyrum esculentum*, Moench) belongs to Polygonaceous family, and originates from Northern Europe and Asia [1]. It has strong adaptability to adverse environmental conditions, for this reason it is mainly cultivated in mountainous area in Russia, China and Ukraine [1,2]. *F. esculentum* can grow in poor soil with limited agronomic treatments, for this reason it is considered an emergency crop [3]. Furthermore, due to the short cycle, in fertile plain soil, buckwheat could be cultivated as intercrops, after wheat and other winter cereals, increasing the profitability of cereal farms. This dicotyledon is considered a pseudocereal that has similarity with cereal grains in the physical appearance and in starch content, but they differ in their anatomy [1]. Buckwheat has also an excellent nutritional value and a low allergenic impact. Proteins are not toxic for celiac patients, but their total digestibility is reduced due to the presence of protease inhibitors (tannins and fiber) [1]. The amino acids composition is well-balanced if compared to the cereals one, due to a high content in lysine and arginine [1]. For these reasons buckwheat flour is used for formulation of gluten-free products and as a high valued ingredient.

In this context, a variety screening focused on the identification of cultivars with high added value is underway, considering the cultivar actually cultivated in North Italy and in other European Countries. The characterization of different buckwheat cultivars may be useful to identify varieties with suitable agronomic and productive characteristics and responding to specific qualitative requirements of the processing industry in Piedmont. Seven different cultivars, such as “Panda”, “Lileja”, “Harpe”, “Billy”, “MHR Korona”, “MHR Smuga” and “Misto Tudori” (a mixture of “Kora” and “Smuglianka” cultivar) were analysed in their proximate composition and total polyphenol and flavonoid contents. Preliminary results have shown that three cultivars stand out for total dietary fiber (“MHR Korona”), lipid (“Panda”) and total flavonoid content (“Misto Tudori”). Further investigation will be carried out on protein quality and the flavonoid composition will be characterized.

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<b>A</b>		
Abouelenein D.	C49	P07, P34, P46
Accetta F.	P71	P102
Acquaviva A.	P68	P102
Aguzzi C.	P59	P102
Aiello A.	P78	C62
Albergamo A.	C11, C58, P31, P101, P102, P106	P44
Alcaro S.	C05, C23, P25	C81
Alessandroni L.	C31, C49, P01, P37, P67	C71, P55
Allegrini P.	P39	P61
Amani B.T.	P71	C74
Amato A.	P14, P69, P98	P83
Amato F.	P89	C23
Ambroselli D.	C56, P02, P53, P68	C12, C74
Andrenelli L.	C79	C45, C75, C76, P81
Angeletti M.	P59	P81
Angeloni S.	P38, P59	P24
Angelozzi G.	C55	C47
Angioni A.	C60	C33, C77
Antonazzi F.	P16	C80, C87, P50
Aparicio-Ruiz R.	C62	C09, P14
Aprèa E.	C74	P41
Arapitsas P.	C65	P69
Arcoleo G.	P86	C10
Arena K.	C69, C73, P27, P72	C32
Arlorio M.	C15, C24, P18, P22, P28, P40, P52	C15, C24, P21, P22, P28
Arpante I.	C90, P04	P59
Arrigo M.A.	P100	C76
Attard T.	P40	C01
Avellone G.	P41, P91	C36
Ayoub H.S.	P71	P95, P96
<b>B</b>		
Bacchi E.	P74, P77, P80	C68
Baffa G.	P20	P103
Bagnulo E.	C01, P35, P36	C62
Baldi A.	C86, P45, P47, P51	P103
Baldisserotto C.	P26	P81
Balduzzi A.	C50	P95, P96
Balli D.	P21	P85
Bani C.	C14, C48, P10	C86, P45, P47, P51
Bargiacchi E.	P07	C82
Barp L.	C59	C28
Barreca D.	P97	P61, P74, P77, P80
Bartella L.	C03	C04, C09, P03, P08
Bartolomei M.	C80, C87	
Bartolomeo G.	P31, P99, P102, P105, P106	
Basile G.	P78	
Beccaria M.	C66, C91	
Bellumori M.	C07, C19, C51, C79,	
Beltifa A.		
Ben Amour N.		
Ben Mansour H.		
Bendini A.		
Benincasa C.		
Bernabé G.		
Bertelli D.		
Bertuglia T.		
Betta E.		
Bianchi D.M.		
Bianco F.		
Biasioli F.		
Bicchi C.		
Bizzo H.		
Blandino M.		
Blasi F.		
Boggia R.		
Bollati C.		
Bonacci S.		
Bongiorno D.		
Bonsignore A.L.		
Bontempo L.		
Bonzanini F.		
Bordiga M.		
Bordoni L.		
Borreani G.		
Bortolini C.		
Botta B.		
Brancati G.M.		
Branduardi P.		
Brereton P.		
Brigui J.		
Brilhante N.		
Bruni Pagnotta G.		
Bruno F.		
Buccato D.G.		
Buda M.		
Budriesi R.		
Buscemi M.D.		
Buzzanca C.		
<b>C</b>		
Caboni M.F.		P42, P43
Cacciatore M.		C03
Cacciola F.		C69, C73, P72
Caddeo C.		C89
Cafarella C.		C70, C88
Cafeo G.		C41, C44, P33
Cairone F.		C90, P04
Calabrese M.		P78
Calabrò S.		C18
Calani L.		P23
Calderaro A.		P97