

## BIOGRAPHICAL NOTICE

### Obituary of doc. Ing. Dr. Jaroslav Benada, CSc. (1928–2022)

On February 2, 2022, Associate Professor Jaroslav Benada passed away. A leading phytopathologist and plant protection expert, Associate Professor Benada was born March 13, 1928, in Mikulčice into a family that farmed their own land, giving him deep connections to plants, nature, and agriculture.

His private, as well as professional life, was influenced by important historical events. During his studies at the grammar school in Hodonín, he experienced bombing at the end of World War II. Then he continued his studies in the Faculty of Science at Charles University, where he experienced the political changes of 1948 and the student repressions that followed. He left Prague, and in 1951, graduated from the University of Agriculture in Brno (now Mendel University in Brno). That same year, he was offered a job in the newly established Research and Breeding Institute of Field Crops in Kroměříž (now the Agricultural Research Institute Kroměříž). At that time, the institute was situated in the building of the former monastery on Koperníkova Street. He worked there only briefly, because he was interested in postgraduate studies, so he returned to the University of Agriculture in Brno in 1952 to prof. Eduard Baudyš, where he worked as his assistant professor until 1960. During that time, he defended two qualifying theses, where, after the first, he was awarded the title of Doctor of Technical Sciences, along with his dissertation, which completed his full postgraduate studies in 1956.



- Benada J. (1952): *Helminthosporium turcicum* Pass., jako původce onemocnění některých našich teplomilných trav u nás pěstovaných, zejména kukuřice a čiroků [*Helminthosporium turcicum* Pass., as the Causative Agent of Some Diseases of Our Thermophilic Grasses Grown in Our Country, Especially Corn, and Sorghum]. Brno, VŠZ.
- Benada J. (1956): Příspěvek ke studiu fyziologie fytopatogenních hub a ke studiu mechanismu působení mořidel [Contribution to Study of the Physiology of Phytopathogenic Fungi and to Study of the Seed Dressings Mechanism of Action]. Brno, VŠZ.

His involvement with the monograph Agricultural Phytopathology Vol. I–IV (published in Prague 1958–1962) began in 1953. As a scientific editor, he managed to involve almost 60 Czech and Slovak experts in the fields of phytopathology and mycology. He was also the author of a section on cereal diseases (Vol. II). For many years, this monograph was used not only in research, at universities and secondary schools, but also served as a primary source of information for agricultural practice.

- Baudyš E., Benada J., Špaček J. et al. (1958): Zemědělská fytopatologie. II. Choroby polních plodin [Agricultural Phytopathology. II. Diseases of Field Crops]. Praha, ČSAZV.
- Baudyš E., Benada J., Špaček J. et al. (1959): Zemědělská fytopatologie. I. Obecná část [Agricultural Phytopathology. I. General part]. Praha, ČSAZV.
- Baudyš E., Benada J., Špaček J. et al. (1961): Zemědělská fytopatologie. III. Choroby zeleniny [Agricultural Phytopathology. III. Vegetable Diseases]. Praha, ČSAZV.
- Baudyš E., Benada J., Špaček J. et al. (1962): Zemědělská fytopatologie. IV. Choroby ovocných rostlin [Agricultural Phytopathology. IV. Diseases of Fruit Plants]. Praha, ČSAZV.

In the late 1950s, Dr. Benada was fired from the University of Agriculture in Brno; he was banned from working in education and also had to leave university housing. Therefore, the offer of the Kroměříž Research Institute director, Pavel Škopík, was crucial for his later life. In 1960, he returned to Kroměříž with his wife, Evženie, and their sons, Stanislav and Vladimír (born 1956 and 1958).

At the same time, his involvement with the publishing of Atlases of Diseases and Pests of Cultivated Plants began. The atlases were the results of many years of work by a number of experts at home and abroad. Jaroslav Benada was the head of the authors' team and scientific editor for four of the eight atlases published at the State Agricultural Publishing House in Prague. These four atlases concerned oilseeds, legumes, cereals, and beets, and were published in a multilingual, Czech-Russian-German version. In the Atlas of Cereal Diseases and Pests, he authored a section on diseases and also participated in translating texts into German. In the atlases, the symptoms, details of the infected organ, and microscopic distinguishing features are described for important diseases. Symptoms on the host plants were illustrated from living material, and herbarium specimens were contributed by both domestic and foreign herbaria, such as the Commonwealth Kew Mycological Institute (England), Eidgenössische technische Hochschule (Switzerland), Vsesojuznyj institut zaščity rastenij (USSR), and National Fungi Collection (USA). Among others, well-known academic painters Jan Melichar and František Severa took part in the illustrations, one reason why we consider these atlases unique publications with significant historical and artistic value today.

The atlases were also published abroad, especially in the former CMEA (Council of Mutual Economic Assistance) countries. For example, the Atlas of Beet Diseases and Pests was published in a Polish version in Warsaw a year before the edition in Prague, and, later in Amsterdam, in an English-French-German version.

- Benada J., Šedivý J., Špaček J. et al. (1963): Atlas chorob a škůdců olejnin = Atlas boleznej i vreditel' masličných kul'tur = Atlas der Krankheiten und Schädlinge an Ölpflanzen [Atlas of Oilseed Diseases and Pests] (IV). Praha, SZN.
- Benada J., Šedivý J., Špaček J. et al. (1967): Atlas chorob a škůdců obilnin = Atlas boleznej i vreditel' zernových kul'tur = Atlas der Krankheiten und Schädlinge der Getreidepflanzen [Atlas of Cereal Diseases and Pests] (I). Praha, SZN.
- Benada J., Šedivý J., Špaček J. et al. (1968): Atlas chorob a škůdců luskovin = Atlas boleznej i vreditel' zernobobovych kul'tur = Atlas der Krankheiten und Schädlinge der Hülsenfrüchten [Atlas of Legumes Diseases and Pests] (V). Praha, SZN.
- Benada J., Šedivý J., Špaček J. et al. (1985): Atlas chorob a škůdců řepy = Atlas boleznej i vreditel' svekly = Atlas der Krankheiten und Schädlinge der Rübe [Atlas of Diseases and Pests in Beet]. Praha, SZN.

Some editions published abroad:

#### **Germany (GDR)**

- Benada J., Šedivý J., Špaček J. et al. (1966): Atlas der Krankheiten und Schädlinge der Ölpflanzen. Deutsch-Russisch-Tschechisch [Atlas of Oilseed Diseases and Pests. German-Russian-Czech]. Berlin, VEB Deutscher Landwirtschaftsverlag.
- Benada J., Šedivý J., Špaček J. et al. (1968): Atlas der Krankheiten und Schädlinge der Getreidepflanzen. Deutsch-Russisch-Tschechisch [Atlas of Cereal Diseases and Pests. German-Russian-Czech]. Prag, Landwirtschaftsverlag; Berlin, VEB Deutscher Landwirtschaftsverlag.

#### **Poland**

- Benada J., Šedivý J., Špaček J. et al. (1984): Atlas chorób i szkodników buraka [Atlas of Diseases and Pests in Beet]. Warszawa, Państwowe Wydawnictwo Rolnicze i Leśne.

#### **The Netherlands**

- Benada J., Šedivý J., Špaček J. et al. (1987): Atlas of Diseases and Pests in Beet. Atlas des maladies et des parasites de la betterave. Atlas der Krankheiten und Schädlinge der Rübe. Amsterdam, Elsevier.

Jaroslav Benada was also interested in the natural resistance of plants to diseases. He mainly focused on the variable resistance of cereals to obligate parasites, such as mildews and rusts. He developed a method for measuring redox potentials in living plant tissues, and explained their importance for plant resistance, plant integrity and other essential aspects of plant physiology. Ultimately, the study of redox potential be-

came a lifelong theme, as evidenced by his many collaborations in this area with foreign experts. From 1990 to 2000, collaboration with a group of physical chemists in Bavaria and Austria investigated the importance of redox potential in food. Later he published brochure on the importance of redox potentials from many aspects (Benada 2012). He was also the author of a method for measuring redox potentials in soil, cooperating with experts from the University of Montpellier (France) to apply it for evaluating soil quality. The results of this collaboration were published in *Analytica Chimica Acta* (2016) and *Agronomy-Basel* (2018), the latter when Jaroslav Benada was 90.

His active participation in manuals and other conceptual materials for cereal production was widely appreciated (Škopík et al. 1962; Petr et al. 1977). He was a member of the Cereal Commission at the Czechoslovak Academy of Agricultural Sciences, cooperating on monographs on wheat (Foltýn et al. 1970) and barley (Skáladal et al. 1967; Lekeš et al. 1973), and helped develop recommended methods for commercial cereal cultivation (Křen et al. 1998; Benada et al. 2001). He participated in creating new terminology in plant protection (Kúdela et al. 2012), and in developing several dozen special entries for the *Scientific Dictionary of Agriculture* (Vol. 1–13), as well as many dozens of entries for other dictionaries and encyclopaedias.

As an author or co-author, he published nearly four hundred original scientific and popular articles on the protection and cultivation of cereals and other crops. In 1965, the journal *Ochrana rostlin* (now *Plant Protection Science*) was founded. The first article of the first issue was an article by Jaroslav Benada about powdery mildew on wheat. In subsequent issues of this journal, he authored or co-authored more than forty more articles. From 1965 to 1990, he also served as a member of the editorial board of this journal. In addition, he published important contributions in *Rostlinná výroba* (now *Plant, Soil and Environment*) and other international journals, including *Phytopathologische Zeitschrift*, *Biologia Plantarum*, *Flora*, *Folia Zoologica*, *Zeitschrift für Pflanzenkrankheiten und Pflanzenschutz*, and *Pflanzenschutzberichte*. In Czech professional journals, he published dozens of articles for the broader agricultural community.

He lectured at many regional, national and international seminars and conferences on plant protection, phytopathology and plant physiology, and was devoted to agricultural consultancy. He especially excelled in the diagnosis of diseases and pests, not only in cereals, but also in all basic field crops and many other plants. His reputation as an excellent diagnostician quickly spread, and, gradually, not only his colleagues, but also students, agronomists, agricultural advisers, gardeners and lovers of houseplants turned to him with their problems. He was able to identify diseases on living plants (and even harvested ones). He never refused to help.

Participation in the education of younger colleagues was very important to him; some of those colleagues have remained in our research institute, while others found employment at other institutions. His keen mind allowed him to work until 2018 when he was 90. At the end of his active career, his colleagues gave him a tree, a copper beech (*Fagus sylvatica purpurea*), which was planted in the garden in front of the Agricultural Research Institute in Kroměříž. It was a thank you for his life's work, and also for the garden itself. Back in 1964, as part of the opening of the new institute building on Havlíčkova street, Jaroslav Benada selected the trees and shrubs for this garden and created the planting design. Today, it is a mature, very beautiful garden.

Jaroslav Benada was a very friendly expert, who maintained the respect of his colleagues and stakeholders throughout his professional life. In addition to many other professional awards, he was awarded a "Ctibor Blatný Memorial Medal" in November 2007 for lifelong research in plant protection. The work of Jaroslav Benada far exceeded the boundaries of the experimental fields in Kroměříž. As a top expert, he contributed to the development of plant protection and other agricultural disciplines in Czechoslovakia, the Czech Republic and abroad.

#### Other cited books:

- Benada J. (2012): Význam redoxních potenciálů a pH pletiv rostlin pro jejich rezistenci k chorobám a pro fyziologii rostlin [Redox Potential and pH in Plants and Their Function in the Mechanism of Resistance to Diseases and in Plant Physiology]. Kroměříž, Agrotest fyto, s.r.o.
- Benada J., Flašarová M., Hubík E. et al. (1990): Teorie a praxe vysokých výnosů a kvality obilnin: Metodiky pro zavádění výsledků výzkumu do zemědělské praxe [Theory and Practice of High Yields and Cereal Quality: Methodologies for Introducing Research Results into Agricultural Practice]. Kroměříž, Výzkumný a šlechtitelský ústav obilnářský Kroměříž, s.r.o.

- Benada J., Flašarová M., Hubík K. et al. (2001): Metodika pěstování jarních obilnin [Methodology of Growing Spring Cereals]. Kroměříž, Zemědělský výzkumný ústav Kroměříž, s.r.o.
- Foltýn J., Apltauerová M., ... Benada J. ... et al. (1970): Pšenice [Wheat]. Praha, SZN.
- Křen J., Benada J., Flašarová M. et al. (1998): Metodika pěstování ozimých obilnin [Methodology of Growing Winter Cereals]. Kroměříž, Zemědělský výzkumný ústav Kroměříž, s.r.o.
- Kúdela V., Kocourek F., ... Benada J. ... et al. (2012): České a anglické názvy chorob a škůdců rostlin. Czech and English Names of Plant Diseases and Pests. Praha, Česká akademie zemědělských věd, Profi Press.
- Lekeš J., Bareš I., Benada J. et al. (1973): Pěstujeme obilniny v ČSR [Growing Cereals in Czechoslovakia]. Praha, Státní zemědělské nakladatelství.
- Lekeš J., Benada J., Brückner F. et al. (1985): Ječmen [Barley]. Praha, SZN.
- Petr J., Benada J., Kohout V. et al. (1977): Obilní a bílkovinný program Čs. zemědělství v 6. pětiletce [Cereals and Protein Program of Czechoslovak Agriculture in 6<sup>th</sup> Five-Year Plan]. Praha, Institut výchovy a vzdělávání MZeČR.
- Skládal V., Benada J., Bezděk V. et al. (1967): Sladovnický ječmen [Malting Barley]. Praha, SZN.
- Škopík P., Derco M., Benada J. et al. (1962): Aktuální otázky obilnářství [Actual Issues of Cereals]. Praha, SZN.

## REFERENCES

- Kroftová V. (2017): Jaroslav Benada. In: Mihulka S. (ed.). Osobnosti zemědělského výzkumu 20. století [Personalities of Agricultural research in 20th century]. Praha, Česká akademie zemědělských věd: 173.
- Kroftová V. (2018): Významné životní jubileum Doc. Ing. Dr. Jaroslava Benady, CSc. [Significant life anniversary of Doc. Ing. Dr. Jaroslav Benada, CSc.]. *Obilnářské listy*, 26: 16–17.
- Řehák V. (2008): Česká společnost rostlinolékařská oceňuje práci v rostlinolékařské péči [The Czech Phytosanitary Society appreciates work in phytosanitary care]. *Rostlinolékař*, 19: 34.
- Váňová M. (1988): Ing. dr. Jaroslav Benada, CSc., šedesátníkem [Ing. dr. Jaroslav Benada, CSc. in his sixtieth year]. *Ochrana rostlin*, 24: 79–80.

*Věra Kroftová, Marie Váňová, Kroměříž, Czech Republic*

Received: June 22, 2022

Accepted: August 22, 2022

Published online: August 22, 2022